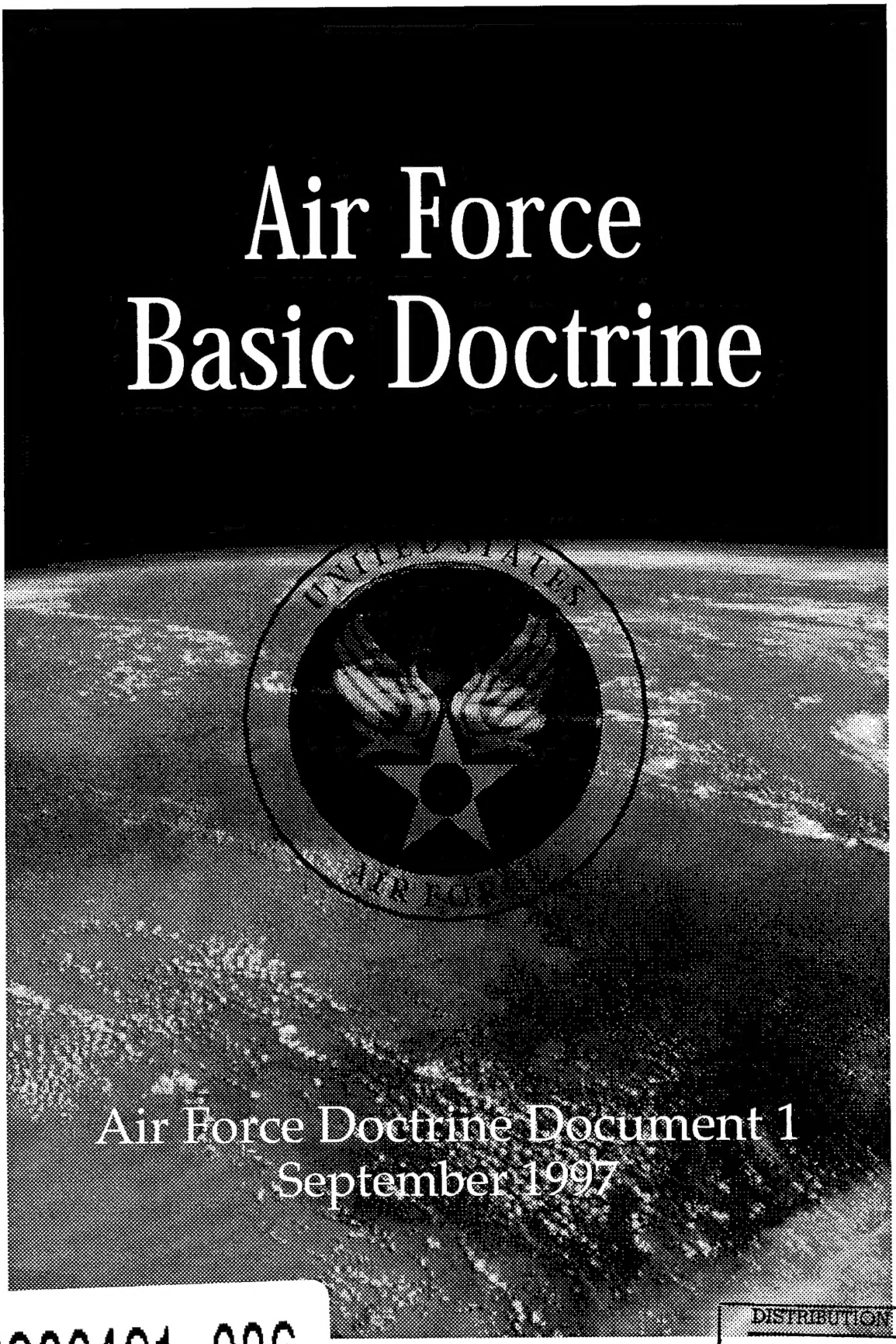
Air Force Basic Doctrine



Air Force Doctrine Document 1
September 1997

BY ORDER OF THE
SECRETARY OF THE AIR FORCE

AIR FORCE DOCTRINE DOCUMENT 1
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Chief of Staff

FOREWORD

To provide the nation's air and space force with a common, integrated vision, Air Force doctrine must draw together the lessons of our history, the vectors of technology, and our insights about the future. The lessons of air and space power history are replete with examples of the dedication and sacrifice of those who have served their nation through our proud history as the Army Air Service, the Army Air Corps, and finally the United States Air Force. These lessons survive today and are reflected in the principles of war and our own tenets of air and space power. As our experience in air and space warfare has evolved, however, these historic principles must now be viewed in light of modern air and space power capabilities. Accordingly, we have developed core competencies to provide insight into the specific capabilities that the US Air Force must bring to activities across the range of military operations.

Together, the principles, tenets, and core competencies describe air and space power as a force distinct from surface forces and the air arms of other Services. The United States Air Force, through operations in the air, space, and information environments, is a global strategic power that can protect national interests and achieve national objectives by rapidly projecting potent air, space, or joint force land power anywhere on earth.

This basic doctrine presents the guiding principles of our Service and our view of the opportunities of the future. It will serve us well in coping with the hazards of war as well as the challenges of keeping the peace. I commend it to all of you—active duty, reserves, and civilians alike. **These warfighting concepts describe the essence of air and space power and provide the airman's perspective. As airmen, we must understand these ideas, we must cultivate them and, importantly, we must debate and refine these ideas for the future.**

U.S. AIR FORCE
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1947 - 1997

MICHAEL E. RYAN
General, USAF
Chief of Staff

September 1997

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INTRODUCTION

PURPOSE

This document has been prepared under the direction of the Chief of Staff of the Air Force (CSAF). It establishes general doctrinal guidance for the application of air and space forces in operations across the full range of military operations from global nuclear or conventional warfare to military operations other than war (MOOTW). It is the premier statement of US Air Force basic doctrine and as such should form the basis from which air commanders plan and execute their assigned air and space missions and act as a component of a joint or multinational force.

APPLICATION

This Air Force Doctrine Document (AFDD) applies to all active duty, Air Force Reserve, Air National Guard, and civilian Air Force personnel. The doctrine in this document is authoritative but not directive. Therefore, commanders need to consider not only the contents of this AFDD, but also the particular situation when accomplishing their missions.

SCOPE

Air Force assets (people, weapons, and support systems) can be used across the range of military operations at the strategic, operational, and tactical levels of war. This AFDD discusses the application of the full range of Air Force air and space capabilities to accomplish the missions assigned by National Command Authorities (NCA).

JOINT DOCTRINE

This document is consistent with, and complements, Joint Publication (Pub) 1, *Joint Warfare of the Armed Forces of the United States;* Joint Pub 0-2, *Unified Action Armed Forces (UNAAF);* Joint Pub 1-02, *DOD Dictionary of Military and Associated Terms;* Joint Pub 3-0, *Doctrine for Joint Operations;* and Department of Defense Directive (DODD) 5100.1, *Functions of the Department of Defense and Its Major Components;* but its purpose is to promulgate the Air Force perspective on the employment of air and space power. As such, it focuses on how Air Force assets can be organized, trained, equipped, and operated to conduct and support joint operations.

CHAPTER ONE

DOCTRINE, STRATEGY, AND WAR

DOCTRINE DEFINED

At 0200 local time on the morning of 17 January 1991, airmen from all military services and 10 nations became the "thunder and lightning" of Operation Desert Storm.... Literally in minutes, the coalition delivered a knockout blow to Iraqi air defenses and paved the way for thousands of air sorties to pummel Iraqi leadership, their command and control capabilities, essential services, infrastructure, and military forces. After only 28 days, the Iraqi army in Kuwait and eastern Iraq was so demoralized, disorganized, and degraded that coalition surface operations envisioned to require weeks took only days.

Colonel Edward C. Mann III
Thunder and Lightning:
Desert Storm and the Airpower Debates

Air and space doctrine is a statement of officially sanctioned beliefs and warfighting principles that describe and guide the proper use of air and space forces in military operations. It is what we have come to understand, based on our experience to date. *The Air Force promulgates and teaches this doctrine as a common frame of reference* on the best way to prepare and employ air and space forces. Accordingly, air and space *doctrine shapes the manner in which the Air Force organizes, trains, equips, and sustains its forces.* Doctrine prepares us for future uncertainties and, combined with our basic shared core values, *provides a common set of understandings on which airmen base their decisions.* Doctrine consists of the fundamental principles by which military forces guide their actions in support of national objectives. It is the linchpin of successful military operations, and *Air Force doctrine is meant to codify accumulated wisdom and provide a framework for the way we prepare for, plan, and conduct air and space operations.* In application, doctrine must be treated with judgment but must never be dismissed out of hand or through ignorance of its principles.

Air and space doctrine is an accumulation of knowledge gained primarily from the study and analysis of experience, which may include actual combat or contingency operations as well as equipment tests or exercises. As such, doctrine reflects what has usually worked best. In those less frequent instances in

which experience is lacking or difficult to acquire (e.g., theater nuclear operations), doctrine may be developed through analysis of theory and postulated actions. **It must be emphasized that doctrine development is never complete.** Innovation has always been a key part of sound doctrinal development and must continue to play a central role. Doctrine is constantly changing as new experiences and advances in technology point the way to the force of the future.

LEVELS OF AIR AND SPACE DOCTRINE

The Air Force places air and space doctrine at different levels and depths of detail in the forms of basic, operational, and tactical doctrine.

Basic Doctrine

Basic doctrine states the most fundamental and enduring beliefs that describe and guide the proper use of air and space forces in military action. *It describes the "elemental properties" of air and space power and provides the airman's perspective.* Because of its fundamental and enduring character, basic doctrine *provides broad and continuing guidance on how Air Force forces are organized and employed.* As the foundation of all air and space doctrine, basic doctrine also sets the tone and vision for doctrine development for the future. AFDD 1 is the airman's basic doctrine.

Operational Doctrine

Operational doctrine, contained in AFDD 2-series publications, describes more detailed organization of air and space forces and applies the principles of basic doctrine to military actions. Operational doctrine *guides the proper employment of air and space forces in the context of distinct objectives, force capabilities, broad functional areas, and operational environments.* Basic doctrine and operational doctrine *provide the focus for developing the missions and tasks* that must be executed through tactical doctrine.

Tactical Doctrine

Tactical doctrine describes the proper employment of specific weapon systems individually or in concert with other weapon systems to accomplish detailed objectives. Tactical doctrine *considers particular tactical objectives* (blockading a harbor with aerial mines) and tactical conditions (threats, weather, and terrain)

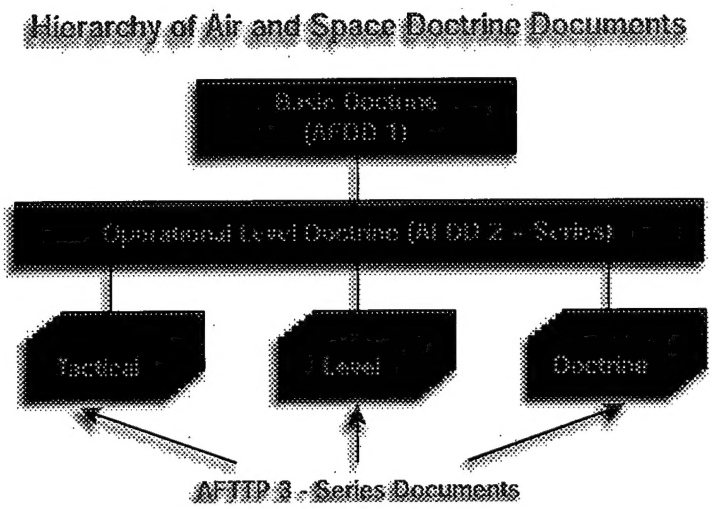


Figure 1.1. Hierarchy of Air and Space Doctrine Documents

and *describes how weapon systems are employed* to accomplish the tactical objective (B-1s laying sea mines at low altitude). Tactical doctrine is *codified in Air Force Tactics, Techniques, and Procedures (AFTTP) 3-series manuals.* (Formerly known as Multiple Command Manuals (MCM) 3-1 and 3-3 series.)

TYPES OF DOCTRINE

Service Doctrine

Service doctrine, such as the AFDD and AFTTP series, outlines Service competencies and guides the application of Service forces.

Joint Doctrine

Joint doctrine applies air and space doctrine to joint operations and describes the best way to integrate and employ air and space forces with land and naval forces in military action. Joint doctrine is published in the joint publication system.

Multinational Doctrine

Multinational doctrine applies air and space doctrine to joint multinational operations and describes the best way to

integrate and employ air and space forces with the forces of our allies in coalition warfare. It establishes the agreed upon principles, organization, and fundamental procedures between or among allied forces. Commanders of forces operating as part of a multinational (alliance or coalition) military command should follow multinational doctrine and procedures ratified by the United States. For doctrine and procedures not ratified by the United States, commanders should evaluate and follow the multinational command's doctrine and procedures, where applicable.

Service, joint, and multinational doctrine is published at the basic, operational, and tactical levels.

THE RELATIONSHIP OF MILITARY DOCTRINE TO STRATEGY

> ***The flexibility of an air force is indeed one of its dominant characteristics.... Given centralized control of air forces, this flexibility brings with it an immense power of concentration which is unequaled in any other form of warfare.***
>
> **Air Marshal Sir Arthur Tedder**

Military doctrine describes how a job <u>should</u> be done to accomplish military goals; strategy defines how it <u>will</u> be done to accomplish national political objectives. Strategy differs fundamentally from doctrine even though each is necessary for employing military forces. *Strategy originates in policy and addresses broad objectives and the plans for achieving them.* Doctrine evolves from military theory and experience and addresses how best to use military power. However, political, economic, or social realities may dictate strategic and operational approaches that depart from accepted doctrine when leaders develop our national security strategy or develop plans for particular contingencies. When this happens, military commanders should delineate for political leaders the military consequences of those adaptations. However, because war is "an instrument of policy," military commanders must ensure that policy governs the employment of military power and be prepared to adapt operations accordingly.

National Security Strategy

The end of the Cold War transformed US national security requirements. The United States now enters into the twenty-first century with unprecedented prosperity and opportunity that are threatened by dangers of unprecedented complexity. The problems associated with fostering a stable global system will require the US military to play an essential role in building coalitions and shaping the international environment in ways that protect and promote US interests. A *National Security Strategy for a New Century* stresses "the imperative of engagement" through integrated approaches that allow the nation to **shape** the international environment; **respond** to the full spectrum of crises; and **prepare today** for an uncertain future. This strategy depends not only on maintaining a strong defense and ensuring that America's military forces are ready to deter, fight, and win wars. *A key precept will be that those same forces will be increasingly called upon in peaceful military-to-military contacts, humanitarian intervention, peace support, and other nontraditional roles.*

National Military Strategy

National Military Strategy of the United States of America **describes the objectives, concepts, tasks, and capabilities necessary to implement the goals set for the military in** *A National Security Strategy for a New Century.* The national military strategy evolves as the international environment, national strategy, and national military objectives change. *This strategy lays the basis for applying military instruments at the strategic and operational levels.* It requires responsive military forces to *cope rapidly and decisively* with diverse situations including:

- Nuclear and Conventional Threats
- Regional Instability
- Proliferation of Weapons of Mass Destruction
- Threats to Unilateral Peace-support Operations
- Drug-trafficking
- Terrorism
- Regional Wars
- Natural Disasters

Figure 1.2. Military Spectrum

To execute this national military strategy of flexible and selective engagement, our military forces must not only be trained, organized, and equipped to fight, but must also be ready to engage across the spectrum of peace, crisis, and conflict as part of any joint, combined, United Nations, or interagency force.

Fundamental Nature of War

Three enduring truths describe the fundamental nature of war. These are not likely to change, even as technology provides what is often referred to as a "revolution in military affairs." **War's political nature and the physical stress and agony of combat will outlive our attempts through technological progress and our most fervent desires to make it bloodless and devoid of violence.** The means may change, but the fundamental nature and risks of warfare will remain.

- **War is an instrument of national policy.** *Victory in war is not measured by casualties inflicted, battles won or lost, or territory occupied, but by whether or not political objectives were achieved.* More than any other factor, political objectives (one's own and those of the enemy) shape the scope and intensity of war. Military objectives and operations must support political objectives and must be coordinated and orchestrated with nonmilitary instruments of power.

- **War is a complex and chaotic human endeavor. Human frailty and irrationality shape war's nature.** *Uncertainty and unpredictability—what many call the "fog" of war—combine with danger, physical stress, and human fallibility to produce "friction," a phenomenon that makes apparently simple operations unexpectedly, and sometimes even insurmountably, difficult.* Uncertainty, unpredictability, and unreliability are always present, but sound doctrine, leadership, organization, core personal values, technologies, and training can lessen their effects.

- **War is a clash of opposing wills. An enemy can be highly unpredictable.** War is not waged against an inanimate or static object, but against a living, calculating enemy. *Victory results from creating advantages against thinking adversaries bent on creating their own advantages.* This produces a dynamic interplay of action and reaction in which the enemy often acts or reacts unexpectedly. *While physical factors are crucial in war, the national will and the leadership's will are also critical components of war.* The will to prosecute or the will to resist can be decisive elements.

AIR AND SPACE POWER IN WAR

The overriding objective of any military force is to be prepared to conduct combat operations in support of national political objectives—to conduct the nation's wars. War is a struggle between rival political groups or nation states to attain competing political objectives. War does not have to be officially declared for armed forces to be thrust into wartime conditions or engage in combat operations; in fact, the vast majority of military operations are not conducted under the banner of a declared war or even preplanned combat operations. Once political leaders resort to the use of force, or possibly even the threat of force, they may place their forces "at war," at least from the perspective of those engaged. *War is a multidimensional activity which can be categorized in various ways: by intensity (low to high); by duration (short or protracted); by the means employed (conventional, unconventional, nuclear); or by the objectives/resources at stake (general or limited war).*

Warfare is normally associated with the different mediums of air, land, sea, and space. *In addition, information is now considered another medium in which some aspects of warfare can be conducted.* The US Air Force conducts air, space, and information warfare to support the objectives of joint force commanders (JFCs). In addition, air and space forces accomplish a wide variety of traditional and information-related functions, classically described as intelligence, surveillance, and reconnaissance (ISR). *These functions can be conducted independently from land and sea operations and can complement, support, or be supported by, land and sea operations.*

AIR AND SPACE POWER IN MILITARY OPERATIONS OTHER THAN WAR (MOOTW)

The challenges our armed forces face today are more ambiguous and regionally focused than during the Cold War. These challenges can no longer be described as a single threat (the Soviet Union) but as multiple risks: economic and political transitions, repressive regimes, the spread of weapons of mass destruction, proliferation of cutting-edge military technology, violent extremists, militant nationalism, ethnic and religious conflict, refugee overflows, narcotics trafficking, environmental degradation, rapid population growth, and terrorism. The military instrument of national power, either unilaterally or in combination with the economic and diplomatic instruments, may be called upon to meet these challenges. Under such circumstances, military operations other than war may deter war, resolve conflict, relieve suffering, promote peace, or support civil authorities.

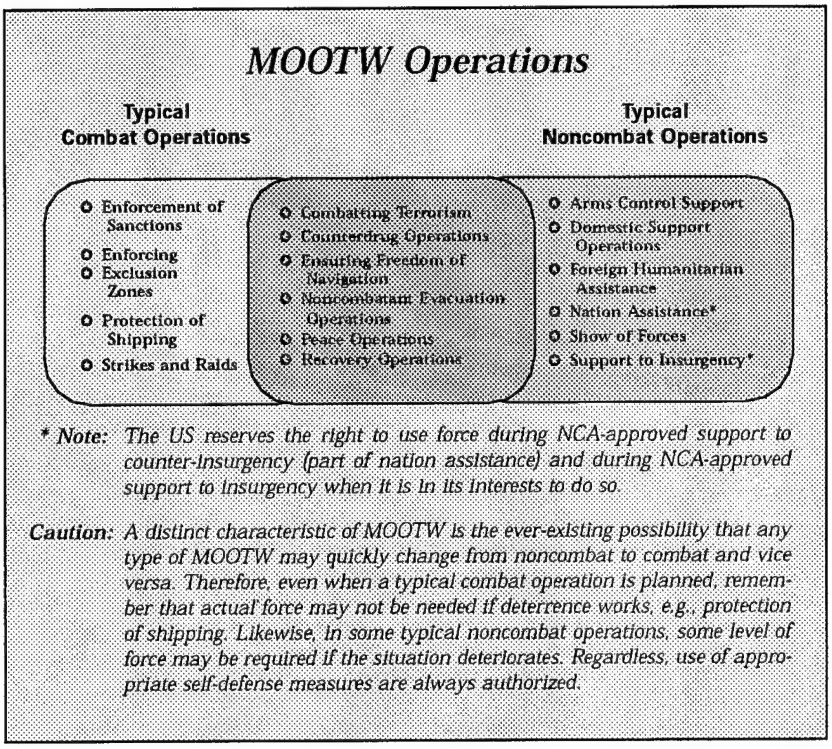


Figure 1.3. MOOTW Operations

MOOTW Operations

MOOTW operations often include specialized equipment and specialized skills.

MOOTW are military actions not associated with sustained, large-scale combat operations. Application of global strategic air and space forces can still be appropriate and effective, as can the special operations component. Military actions can be applied to

complement any combination of the other instruments of national or international power. To leverage effectiveness, it is particularly important that actions be integrated, mutually reinforcing, and clearly focused on compatible objectives throughout the engaged force, whether US, allied, military, civilian, or nongovernmental organizations. *The overall goal of MOOTW is to pursue US national policy initiatives and to counter potential threats to US national security interests.*

MOOTW may be classified as typically combat, typically noncombat, and a group of operations that may be either combat or noncombat (for representative examples, see figure 1.1). Even though there are many types of MOOTW typically not involving combat, **airmen must understand that violence (and casualties) may occur in virtually any type of operation** and, therefore, must be ready and able at all times to defend themselves and their units.

Air, space, and information functions are adaptable to MOOTW, and certain assets may be applied to attain strategic-, operational-, or tactical-level effects against limited objectives as effectively as those mounted against more traditional wartime targets. Whether providing rapid, focused global mobility; supporting information operations that shape and influence the situation; isolating operations from air or ground interference; or providing the eyes and ears of a sophisticated command and control system; the flexibility of air and space forces is integral to any operation. Air and space forces can be the supported force (airlift or special operations to provide foreign humanitarian assistance or to conduct a limited raid; counterair to enforce an air exclusion zone; or information operations to determine treaty compliance), an enhancing force (air- and space-based ISR), or a supporting force (close air support, some interdiction, and some suppression of enemy air defenses [SEAD]). Air and space forces are an essential element in successful MOOTW.

CHAPTER TWO

THE AIRMAN'S PERSPECTIVE

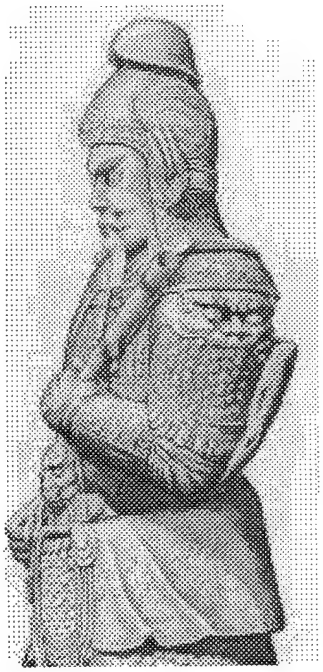
The airplane is the only weapon which can engage with equal facility, land, sea, and other forces....

Major General Frank M. Andrews
Army Air Corps, 1938

There are many aspects and lessons of aerial warfare that can be gleaned from its relatively short history. **Two-dimensional surface warfare concepts and doctrine still dominate military thinking. If air and space power is to reach its full potential, airmen must reexamine all aspects of warfare from the multidimensional (time, vector, velocity, and elevation) air and space perspective.** *Air and space power employment is guided by the principles of war and tenets of airpower, implemented through core competencies. Airmen must understand these fundamental beliefs as they apply to air and space power.*

PRINCIPLES OF WAR

Throughout the history of conflict, military leaders have noted certain principles that tended to produce military victory. From ancient China to today, certain "truths" of warfare have emerged. Known as **the principles of war—unity of command, objective, offensive, mass, maneuver, economy of force, security, surprise, and simplicity—Joint Publication (Pub) 1 refers to them as "those aspects of warfare that are universally true and relevant."** Because the history of heavier-than-air flight extends back only to the beginning of the twentieth century, it is not surprising that traditional, two-dimensional surface warfare concepts dominate military thinking. *The principles of war apply equally to all of the US armed forces. As the Air Force component of the joint team, airmen*



Sun Tzu

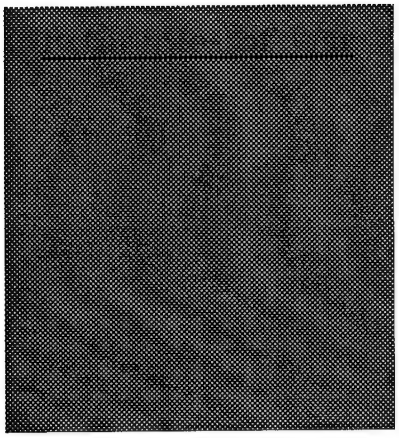


Figure 2.1. Principles of War

should appreciate how these principles apply to all forces but must fully understand them as they pertain to air and space forces. Air and space forces, no matter which Service operates the systems, and no matter which type of platform, provide unique capabilities through operations in the third dimension. **The principles of war are guidelines that commanders can use to form and select a course of action.**

These principles represent generally accepted "truths" which have proven to be effective throughout history. Of course, **even valid principles are no substitute for sound, professional judgment—but to ignore them totally is equally risky.** The complexity of war in general, and the unique character of each war in particular, prohibits commanders from using these principles as a checklist to guarantee victory. Rather, they serve as valuable guides to evaluate potential courses of action.

The principles are independent—but tightly fused in application. **No one principle should be considered without due consideration of the others.** These principles are not all-inclusive but provide a basis for judgment in employing military forces. *The art of developing air and space strategies depends upon the airman's ability to view these principles from an aerial perspective and integrate their application with the airman's fundamentals.* The principles of war—combined with the additional fundamentals of air and space power discussed later in this chapter—provide the basis for a sound and enduring doctrine for the air and space forces of America's joint force.

Unity of Command

Unity of command ensures the concentration of effort for every objective under one responsible commander. This principle emphasizes that **all efforts should be directed and coordinated toward a common objective.** *Air and space power's theater wide perspective calls for unity of command to gain the most efficient application.* Coordination may be achieved by cooperation; it is, however, best achieved by vesting a single commander with the authority to direct

all force employment in pursuit of a common objective. The essence of successful operations is a coordinated and cooperative effort toward a commonly understood objective. In many military operations other than war, the wide-ranging agency and nongovernmental operations involved may dilute unity of command; nevertheless, *a unity of effort must be preserved in order to ensure common focus and mutually supporting actions.*

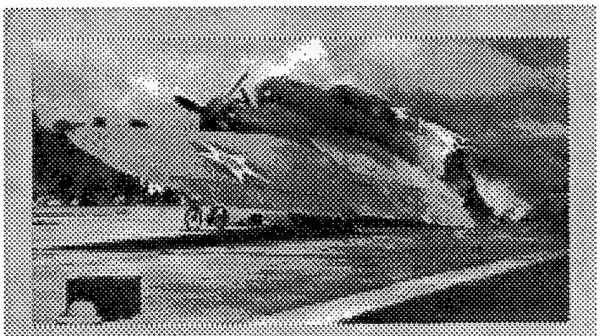
Unity of command is important for all forces, but it is vital in employing air and space forces. **Air and space power is the product of multiple capabilities, and centralized command and control (C^2) is *essential* to effectively fuse these capabilities.** Airmen best understand the entire range of air and space power. *Theater and global ranging capabilities impose theater and global responsibilities, which can be discharged only through the integrating function of centralized command under an airman.* That is the essence of unity of command and air and space power.

Objective

The principle of objective is concerned with directing military operations toward a defined and attainable objective that contributes to strategic, operational, or tactical aims. In application, this principle refers to unity of effort. Success in military operations demands that all efforts be directed toward the achievement of common aims. In a broad sense, this principle holds that **political and military goals should be complementary and clearly articulated.** A clear national military strategy provides focus for defining campaign or theater objectives. At the operational level, campaign or theater objectives determine military priorities. Importantly, particularly in peace support operations, the time and persistence required to attain the objective must be clearly understood by all.

The objective is important to all military forces, but it is especially so in air, space, and information warfare due to the versatility of air and space forces. **Unlike surface forces, modern air and space forces do not normally need to sequentially achieve tactical objectives first before pursuing operational or strategic objectives.** From the outset, air and space forces can pursue tactical, operational, or strategic objectives, in any combination, or all three simultaneously. *From an airman's perspective, then, the principle of the objective shapes priorities to allow air and space forces to concentrate on theater or campaign priorities and seeks to avoid the siphoning of force elements to fragmented objectives.*

Offensive

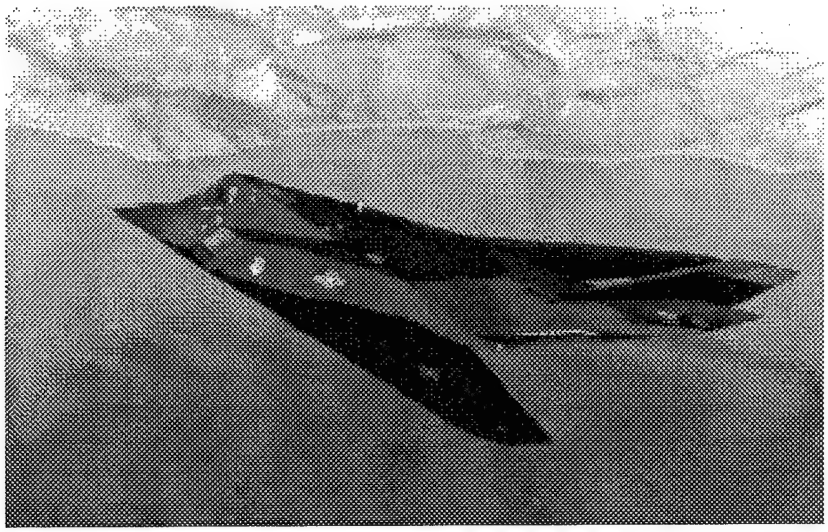


At the beginning of World War II, the failure of US forces in the Philippines to seize the initiative resulted in disaster. Despite knowing that Japan had attacked Pearl Harbor, US forces on the Philippines never launched an intended B-17 counterblow to Japanese forces on Formosa. Instead, Japanese bombers and fighter planes were left free to attack and destroy 18 of 35 B-17s on the ground plus 56 fighters and a number of other aircraft. Only 7 Japanese fighters were lost. Soon after this airpower victory, Japan began its land invasion.

This principle is also one that has significant meaning to air warfare. Offensive is to act rather than react and dictates the time, place, purpose, scope, intensity, and pace of operations. The initiative must be seized as soon as possible. *The principle of the offensive holds that offensive action, or initiative, provides the means for joint forces to dictate battlespace operations.* Once seized, the initiative should be retained and fully exploited.

Air and space forces are best used as an offensive weapon. While defense may be dictated by the combat situation, success in war is generally attained only while on the offensive. This is particularly true for air and space forces. Even highly successful defensive air campaigns such as the World War II Battle of Britain were based upon selective offensive engagements rather than fragmenting into small patrols everywhere. *Air and space forces are inherently offensive at the tactical level, even when employed in operational or strategic defense.* Control of air and space is offensive in execution. History has generally shown that **a well-planned and executed air attack is extremely difficult to completely stop.** The speed and range of attacking air and space forces give them a significant offensive advantage over surface forces and even over the defending air and space forces, since for air attack the defender often requires more forces to defend a given surface area than the attacker requires to strike a set of specific targets.

Although all military forces have offensive capabilities, **airpower's ability to mass and maneuver and its ability to operate at the tactical, operational, or strategic levels of warfare—or to simultaneously operate at all levels—provide JFCs a resource with global presence to directly and almost immediately seize the initiative.** Whether rapidly deploying forces and supplies into a region, conducting combat operations, or providing information superiority over an enemy, air and space forces provide the JFC the means to take the offensive. From the beginning of an operation, air forces can seize the initiative by attacking the enemy directly by flying over enemy lines and flying around massed defenses. Through prompt and decisive offensive actions designed to attain operational and strategic objectives, air and space forces cause the enemy to react rather than act, deny the enemy the offensive, and shape the remainder of the conflict.

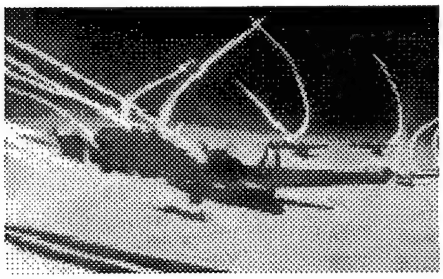


In the Gulf War, airpower seized the initiative by first enabling the rapid and unprecedented logistics buildup. Next, combat air and space power allowed coalition forces to overfly the entrenched Iraqi ground forces and strike precisely at Baghdad's ability to plan, execute, and sustain effective large-scale military operations.

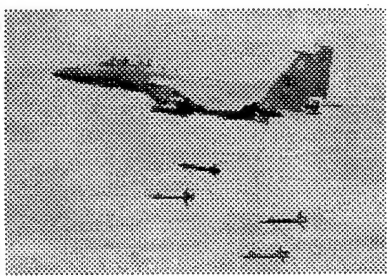
Mass

The principle of mass calls for concentrating combat power at a decisive time and place. Concentration of military power is a fundamental consideration in all military operations. At the operational level, this principle suggests that *superior, concentrated combat power is used to achieve decisive results.*

Generally, surface forces must mass combat power before launching an attack, whereas **airpower is singularly able to launch an attack from widely dispersed locations and mass combat power at the objective.** Moreover, from an airman's perspective, mass is not based only on the quantity of forces and materiel committed. **Mass is an effect . . . not just overwhelming quantity.** *The speed, range, and flexibility of air forces—complemented by the accuracy and lethality of precision weapons and advances in command, control, and information gathering technologies—allow them to achieve mass faster than surface forces.* Mass is an effect that air and space forces achieve through efficiency of attack. **Today's air and space forces have altered the concept of massed forces.** In the past, hundreds of airplanes attacked one or two major targets each day. Massed bomber raids revisited targets often, intending their attacks to gradually attain cumulative operational- or strategic-level effects over time. *Today, a single precision weapon that is targeted using superior battlespace awareness can often cause the destructive effect that in the past took hundreds of bombs.* Emerging information warfare (IW) capabilities also present new opportunities to attack critical targets. IW can, with precision, stealth, and the speed of light, affect a variety of functions and capabilities.

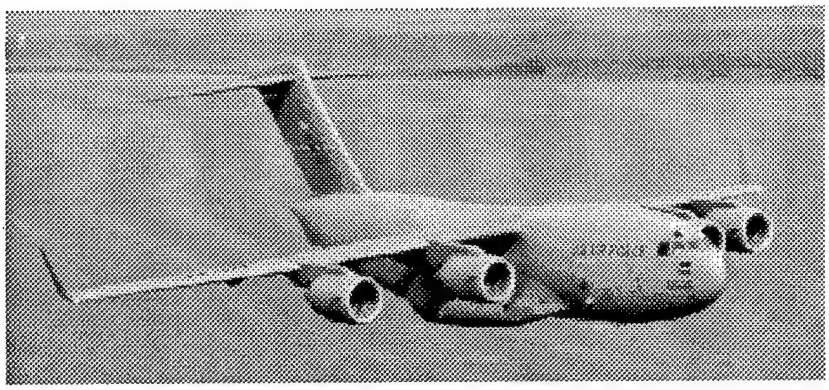


Mass: 1945



Mass: 1991

The airman's perspective of mass must also include airpower's ability to assist in the massing of lethal and non-lethal surface forces. Airlift provides a significant and critical capability to mass lethal and nonlethal forces on a global scale. The rapid mobility of airlift enabled the airborne assault during Operation JUST CAUSE, which played a pivotal role in massing US forces in Panama. The capability of air forces to act quickly and mass effects, along with the capability to mass other lethal and nonlethal military power, combines the principle of mass with the next principle—maneuver.



The C-17 Globemaster III provides rapid mobility for US forces worldwide.

Maneuver

The principle of maneuver calls for action to place the enemy in a position of disadvantage through the flexible application of combat power. *Air and space power's ability to conduct maneuver is not only a product of its speed and range, but also flows from its flexibility and versatility during the planning and execution of operations.* Like the offensive, maneuver forces the enemy to react, allows the exploitation of successful friendly operations, and reduces our vulnerabilities. *The ability to integrate a force quickly and to strike directly at an adversary's strategic or operational center of gravity (COG) is a key theme of air and space power's maneuver advantage.* Air maneuver allows engagement almost anywhere, from almost any direction, thus forcing the adversary to be on guard everywhere. Additionally, the principle of maneuver is not limited to simple weapons delivery. In 1994, during Operation Vigilant Warrior, airpower's global awareness, global reach, and global presence was clearly demonstrated. Air Force air mobility forces provided combat power to deter Iraqi movements into Kuwait. Whether it involves air mobility or attack aircraft, in small or large numbers, **the versatility and responsiveness of airpower allow the simultaneous application of mass and maneuver.**

Air and space maneuver is uniquely able to achieve mass while moving with unmatched agility. Maneuvering ground forces to achieve military mass has historically taken a tremendous logistics effort and a great deal of time. Airpower, however, is extremely agile in providing military mass. Whether considering the airlift over the Himalayan mountains in 1944, the Berlin airlift of the late 1940s, airlift to Israel in 1973, or more recent operations such as

SUPPORT HOPE in Rwanda, PROVIDE HOPE in the former Union of Soviet Socialist Republics (USSR), or PROVIDE PROMISE in Bosnia, airpower plays a critical role in American diplomacy by providing unmatched maneuverability. In applying the principles of mass and maneuver, air planners must also consider a related principle, that of economy of force.

Economy of Force

The economy of force principle calls for the rational use of force by selecting the best mix of combat power. **To ensure overwhelming combat power is available, minimal combat power should be devoted to secondary objectives.** *At the operational level, this requires minimum effort be made towards secondary objectives that do not support the larger operational or strategic objectives.* This principle requires airmen to exercise a broader operational view and requires clearly articulated objectives and priorities. Economy of force may require airpower in an area to attack, defend, delay, or conduct deception operations, depending on the importance of the area or the priority of the objective or objectives. Although this principle suggests the use of overwhelming force in one sense, it also recommends against "overkill" by guarding against unnecessary force. This is particularly relevant in military operations other than war in which excessive force can destroy the gaining or maintaining of legitimacy and support for an operation. Information operations conducted by air and space forces enable the Joint Force Commander (JFC) to have dominant battlespace awareness in order to economically allocate forces for maximum effect.

While this principle was well developed before the advent of airpower, it responds precisely to the greatest vulnerability of air and space power employment: the misuse or misdirection of air and space power, which can reduce its contribution even more than enemy action. Ill-defined objectives can result in the piecemeal application of air and space forces with the resultant loss of decisive effects.

Security

The principle of security requires that friendly forces and their operations be protected from enemy action that could provide the enemy with unexpected advantage. The lethal consequences of enemy air or space attack make the security of friendly forces a paramount concern. This principle also enhances freedom of action by reducing the vulnerability of friendly forces and creating

USAF Security Forces

opportunities to strike the enemy where least expected. Gaining or maintaining control of the air, space, and information mediums provides friendly forces a significant advantage. **Airpower is most vulnerable on the ground. Thus, air base defense is an integral part of airpower deployments.** Bases not only must withstand aerial and ground attacks, but also must sustain concentrated and prolonged air activities against the enemy. *This must be a particular focus of operations during peace support or crisis situations when forces operate from austere and unimproved locations, in small units, or in crowded urban settings and face threats to security from individuals and groups as well as possible military or paramilitary units.* Importantly, security may be obtained by staying beyond the enemy's reach. Air and space forces are uniquely suited to capitalize on this through their global capabilities. Not only can they reach and strike at extended range, but they can also distribute data and analysis as well as command and control across a worldwide span.

Security from enemy intrusion conceals friendly capabilities and intentions while allowing our forces the freedom to gather information on the adversary. Critical to security is the understanding that air and space power is no longer just aircraft, missiles, and satellites but information warfare tools as well. *Thus security embraces not only physical security, but also security of the information medium.* Information has always been part of air, land, and sea warfare; now, with the proliferation of information technologies, it has become even more central to the outcome of a conflict. *The instantaneous*

global reach of modern information systems is as vital to the Air Force's strategic perspective as any air or space weapon. Today, advanced microchips and communications allow the concept of information superiority to be a strategic component of warfare. Precise strategic attacks delivered against Iraq's central command and control structure during DESERT STORM validated this concept. *Additionally, information technology can directly or indirectly affect national or group leadership, population, and infrastructure, bypassing direct military confrontation.* Now, whoever has the best ability to gain, defend, exploit, and attack information, **and deny the same capabilities to an opponent**, has a distinct strategic advantage. By blinding the Iraqi leadership, air and space power allowed ground forces to move undetected to a point where the Iraqi army was least prepared to deal with a massive attack. Space-based and air-breathing ISR systems allowed the coalition command to direct air strikes against Iraqi troops moving south to assist in the battle of Khafji. Because the Iraqis lacked security, their troops were destroyed long before they reached their objective.

Surprise

Surprise leverages the security principle by attacking at a time, place, or in a manner for which the enemy is not prepared. **The speed and range of air and space forces, coupled with their flexibility and versatility, allow air forces to achieve surprise more readily than surface forces.** *Air- and space-based ISR systems enhance the ability to achieve surprise by providing information superiority.* The choice of time and place of assault rests with the commander of air and space forces because terrain and distance are not inhibiting factors in the air and space environment.

Historically, armies and navies massed large numbers of troops or ships to create significant impact on the enemy. Today, the technology impact of precision guided munitions enables a relatively small number of aircraft to achieve national- or theater-level objectives. *When combined with stealth and information technologies, air and space forces today can provide shock and surprise without unnecessarily exposing massed friendly forces.*

Surprise is one of air and space power's strongest advantages. On 11 November 1940, Admiral Andrew Cunningham delivered a crushing air attack from the HMS *Illustrious* on the Italian naval base of Taranto. While the British lost 2 of 21 attacking aircraft, they left 3 battleships in sinking condition, badly damaged 2 cruisers, and sank 2 fleet auxiliaries. This attack may have inspired the successful

Japanese attack on Pearl Harbor over one year later. The 1986 surprise raid against Libya persuaded Muammar Qadhafi to change his policy of open support of worldwide terrorism. In 1990, Saddam Hussein believed he had nothing to fear from the United States Air Force. What he failed to consider was the global presence of air and space forces. Airlift and air refueling provided global reach, while combat aircraft provided strategic power. When the first explosions rocked downtown Baghdad, the ability of modern airpower to strike without warning, and with great accuracy, proved the Iraqi dictator wrong. Saddam Hussein grossly misjudged the power of an integrated air attack. He saw firsthand the principle of surprise in practice.

Air and space forces can enhance and empower surface forces to achieve surprise. The rapid global reach of airpower also allows surface forces to reach foreign destinations quickly, thus seizing the initiative through surprise. Air and space power allowed the coalition to achieve an overwhelming surprise and also ensured the coalition forces themselves would not become victims of surprise.

Simplicity

The final principle, simplicity, calls for **avoiding unnecessary complexity in organizing, preparing, planning, and conducting military operations.** This ensures that guidance, plans, and orders are as simple and direct as the objective will allow. *Simple guidance allows subordinate commanders the freedom to creatively operate within their battlespace.* Military operations, especially joint operations, are often complex. Common equipment, a common understanding of Service and joint doctrine, and familiarity with procedures through joint exercises and training can help overcome complexity, but straightforward plans and unambiguous organizational and command relationships are central to reducing it. **The premise that airmen work for airmen and that the senior airman (the commander of Air Force forces) works for the JFC is central to simplicity.**

TENETS OF AIR AND SPACE POWER

Air and space power is intrinsically different from either land or sea power, and its employment must be guided by axioms different than those of surface forces. Both the *air and space mediums involve operations in three dimensions.* While airpower is primarily affected by aerodynamics, space power is guided by the principles of orbital mechanics and is not limited by the vertical extent of the atmosphere. *Both share the advantages of three-dimen-*

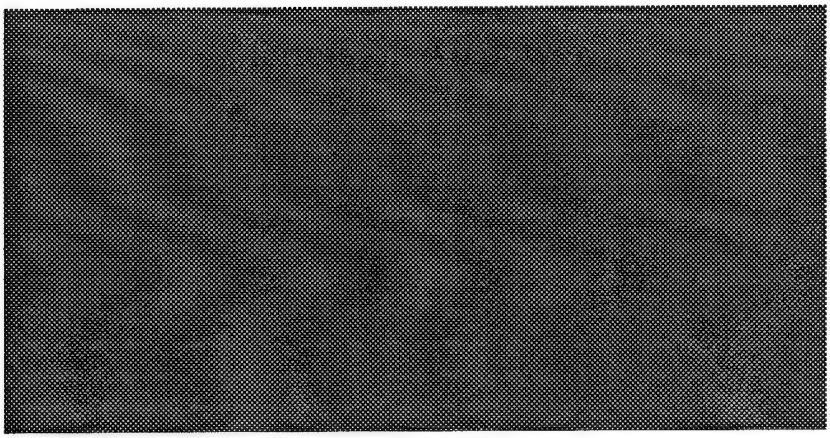


Figure 2.2. Tenets of Airpower

sional maneuver such as the overlook of enemy positions and the ability to maneuver beyond enemy surface forces, and both are inextricably linked by warfighting principles. **The fundamental guiding truths of air and space power employment are known as tenets, which in addition to the principles of war, should be understood by every airman.** They reflect not only the unique historical and doctrinal evolution of airpower but the specific current understanding of the nature of air, space, and, increasingly, information power. *The tenets of airpower complement the principles of war.* While the principles of war provide general guidance on the application of air and space forces, *the tenets provide more specific considerations for air and space forces.* They reflect the specific lessons of air and space operations over the history of powered flight and highlight the way integrated air and space forces differ from surface forces in providing global strategic air and space power.

As with the principles of war, these tenets require informed judgment in application. They require a skillful blending to tailor them to the ever-changing operational environment. The seemingly conflicting demands of the principles and tenets, especially the demands of mass, economy of force, concentration, and priority, **require an airman's expert understanding** in order to strike the required balance. No two operations are alike; therefore, in the last analysis, the commander must accept the fact that war **is incredibly complicated. The application of the principles and tenets must be left to commanders and their professional knowledge and experience as they strive to craft the most effective employment of air and space power for a given situation.**

Centralized Control and Decentralized Execution

Centralized control and decentralized execution of air and space forces are critical to force effectiveness. *Air and space power must be controlled by an airman who maintains a broad strategic and/or theater perspective in prioritizing the use of limited air and space assets to attain the objectives of all US forces in any contingency across the range of operations.* During the initial engagements of World War II and through the entire Vietnam conflict, command of US airpower was fragmented and controlled by competing commanders. The results taught airpower leaders that **centralized control** *was the best way to effectively employ airpower.* The outcome of the Gulf War stands in stark contrast to that of Vietnam.

The lesson is clear: attempts to fragment the control and planning of air and space power will ultimately cost blood and treasure by diverting effort and impact. *Centralized control allows commanders to focus on those priorities that lead to victory.* Through centralized control, commanders give coherence, guidance, and organization to the air and space effort and maintain the ability to focus the tremendous impact of air and space power wherever needed across the theater of operations. Just as central to the proper application of airpower is the concept of **decentralized execution.** *Delegation of execution authority to responsible and capable lower-level commanders is essential to achieve effective span of control and to foster initiative, situational responsiveness, and tactical flexibility.* Centralized control and decentralized execution were illustrated by the 2,000–3,000 sorties a day in the Gulf War. The single command intent of the JFC was centrally planned and then distributed and executed across an entire theater battlespace by over 500 flight leads; mission, crew, and flight commanders; and support teams in a continuous application against an entire range of separately engaging, thinking, reacting enemies.

Flexibility and Versatility

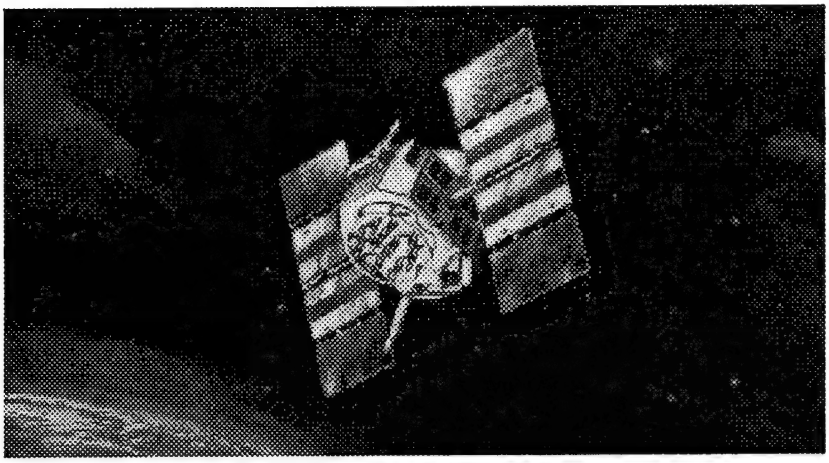
Air and space power is flexible and versatile. Although often used interchangeably, *flexibility* and *versatility* are distinct in meaning. **Flexibility** *allows air and space forces to exploit mass and maneuver simultaneously to a far greater extent than surface forces.* At the operational level, flexibility allows air operations to shift from one campaign objective to another, quickly and decisively. The A-10, usually considered a close air support aircraft, took on many interdiction missions during DESERT STORM, while one wing of F-111s, optimized as long-range, deep-interdiction aircraft, destroyed hundreds of tanks and

armored fighting vehicles with precision weapons. During the Vietnam conflict, B-52 heavy bombers provided highly effective support as close as 1,000 yards from the Marines defending Khe Sanh. **Versatility** *in air and space power stems from the fact that it can be employed equally effectively at the strategic, operational, and tactical levels of warfare.* Unlike other forms of military power, air and space forces have the versatility to be employed globally with unmatched responsiveness in support of strategic, operational, or tactical objectives and can simultaneously achieve objectives at all three levels of war—in parallel operations. Air and space attacks can be simultaneous and continuous against a broad spectrum of targets and with sufficient force to overwhelm the enemy. *The versatility of air and space power, properly executed in parallel attacks, can attain parallel effects which present the enemy with multiple crises occurring so quickly that there is no way to respond to all or, in some cases, any of them.* Such a strategy places maximum stress on both enemy defenses and the enemy society as a whole. *Parallel operations can be conducted at the strategic, operational, and tactical levels of war and either symmetrically against the adversary's air and space forces or asymmetrically against the enemy's surface forces—often simultaneously.*

Parallel force-application theory is not new, but its recent emphasis is essentially a product of the efficiency of high technology precision weapons, command and control techniques, ISR systems, and the resultant synergistic application. For parallel strategic operations, the swift, massive, and precise application of air, space, and information power against several critical COGs may be sufficient to produce shock and may result in organizational paralysis that provides the leverage to dominate surface as well as air and space operations.

Synergistic Effects

Air and space forces produce synergistic effects. The proper application of a coordinated force can produce effects that exceed the individual contributions of the individual forces employed separately. The destruction of a large number of targets through attrition warfare is rarely the key objective in modern war. Instead, it is the precise, coordinated application of the various elements of air, space, and surface forces which brings disproportionate pressure on enemy leaders to comply with our national will. Our overwhelming ability to observe our adversaries allows us to counter their movements with unprecedented speed and agility. Air and space power is unique in its ability to accomplish this and thus dictate the tempo and direction of an entire warfighting effort from MOOTW operations through major conflict.



Space assets provide an unprecedented level of global persistence.

Persistence

Air and space systems are uniquely suited to persistent operations. Persistence suggests continued efforts. *Unlike surface power, air and space power's inherent exceptional speed and range allows its forces to visit and revisit wide ranges of targets nearly at will. Air and space power does not have to occupy terrain or remain constantly in proximity to areas of operation to bring force upon them.* Space forces in particular hold the ultimate high ground, and as space systems advance and proliferate, they offer the potential for "permanent presence" over any part of the globe. The goal of persistent operations may be to maintain a continuous flow of materiel to peacetime distressed areas; surveil adversaries constantly to ensure they cannot conduct actions against our wishes; assure targets are kept continually out of commission; or ensure that resources and facilities are denied to an enemy or provided to an ally during a defined time. The end result would be to deny the opponent an opportunity to seize the initiative and allow friendly forces to directly accomplish their assigned tasks.

Persistence is a critical element in ensuring the prolonged effect of air, space, and information operations. It is the intention of most modern air and space operations to quickly attain objectives through swift, parallel, and decisive blows to the adversary's operational and strategic COGs. However, on some occasions, factors such as enemy resilience, effective defenses, or environmental concerns prevent this from happening. *Realizing that for many situations, air and space operations provide the most efficient and effective means to attain national objectives,* **commanders must persist in air and space operations**

and resist pressures to divert resources to other efforts unless such diversions are vital to attaining theater goals or to survival of an element of the joint force. Given sufficient time, even the most devastating strategic effects can be circumvented by resourceful enemies; the goal is to keep pressure on and not allow the enemy that time.

Concentration

Air and space operations must achieve concentration of purpose. The very versatility of air and space power makes it attractive in almost every combat task. *Airmen must guard against the inadvertent dispersion of air and space power effects resulting from high demand.* One of the most constant and important trends throughout military history has been the effort to concentrate overwhelming power at the decisive time and place. The principles of mass and economy of force deal directly with concentrating overwhelming power at the right time and the right place (or places). With forces as flexible and versatile as air and space power, the demand for them will often exceed the available forces, and may result in the fragmentation of the integrated air and space effort in attempts to fulfill the many demands of the operation. Depending on the operational situation, *such a course of action may court the triple risk of (1) failing to achieve operational-level objectives, (2) delaying or diminishing the attainment of decisive effects, and (3) increasing the attrition rate of air forces consequently, risking defeat in detail.* Importantly, concentration of purpose must not confuse "mass" with "purpose." A vital concept of air and space forces is its inherent ability to accomplish simultaneous strategic, operational, and tactical effects—to conduct parallel operations—and attain overwhelming effect (concentration of purpose) through carefully dispersed applications.

Priority

Air and space operations must be prioritized. Given their flexibility and versatility, **demands for air and space forces will likely swamp air commanders in future conflicts unless appropriate priorities are established.** *Only theater-level commanders of land and naval components can effectively prioritize their individual air component support requirements to the joint force commander, and only then can effective priorities for the use of air and space forces flow from an informed dialogue between the JFC and the air component commander.* The air commander should assess the possible uses of air and space forces and their strengths and capabilities to support (1) the overall joint campaign, (2) air operations, and (3) the battle at hand. *Limited*

resources require that air and space forces be applied where they can make the greatest contribution to the most critical current JFC requirements. The inherent strategic application of air and space forces must be balanced against their ability to conduct operations at all levels of war, often simultaneously. The principles of mass, offensive, and economy of force, the tenet of concentration, and the airman's strategic perspective all apply to prioritizing air and space force operations.

Balance

Air and space operations must be balanced. Balance is an essential guideline for air commanders. Much of the skill of an air commander is reflected in the dynamic and correct balancing of the principles of war and the tenets of airpower to bring air and space power together to produce a synergistic effect. An air commander should balance combat opportunity, necessity, effectiveness, efficiency, and the impact on accomplishing assigned objectives against the associated risk to friendly air and space forces. *An air commander is uniquely—and best—suited to determine the proper theaterwide balance between offensive and defensive operations, and among strategic, operational, and tactical applications. Technologically sophisticated air and space assets will be available only in finite numbers; thus, balance is a crucial determinant for an air commander.*

CORE COMPETENCIES

Core competencies are at the heart of the Air Force's strategic perspective and thereby at the heart of the Service's contribution to our nation's total military capabilities. No presentation of basic air and space doctrine would be complete without a discussion of our core competencies. *They are not doctrine per se, but are the enablers of our doctrine. They begin to translate the central beliefs of doctrine into operational concepts.* Our core competencies represent the combination of professional knowledge, airpower expertise, and technological know-how that, when applied, produces superior military capabilities. These competencies stem from two sources: functions that can be accomplished only by air and space forces and those functions that confer advantages to the nation when performed by air and space forces. *They are the basic areas of expertise that the Air Force brings to any activity across the range of military operations, whether as a single Service or in conjunction with the core competencies of other Services in joint operations.* A particular core competency is not necessarily unique to the Air Force, but for our Air Force they are not

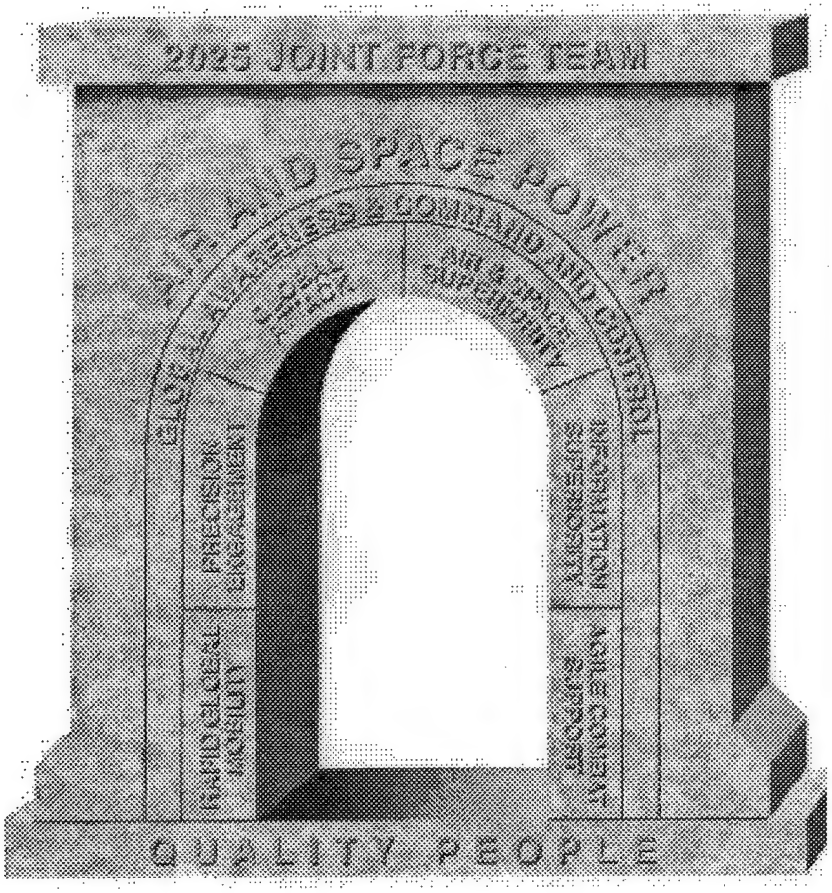


Figure 2.3.

optional. *They are made possible by the effective integration of platforms, people, weapons, bases, logistics, and all supporting infrastructure.* It is important to understand that a particular function may be employed to provide an element of more than one competency. For example, the airlift function may apply to global mobility or precision employment, and reconnaissance may apply to both information superiority and precision employment. *Additionally, what distinguishes the Air Force's core competencies from the core competencies of other Services are the speed and the global nature of its reach and perspective.* In this context, **the competencies represent air and space power capability embodied in a well-trained and equipped air force.** The US Air Force's fundamental service to the nation is its ability to develop, train, sustain, and integrate the elements of air and space power to execute its core competencies across the spectrum of peace and war.

Air and Space Superiority

Air and space superiority rarely is an end in itself but is a means to the end of attaining military objectives. **It is an important first step in military operations.** Control of air and space certainly enhances, and may even secure, freedom of action for friendly forces in all geographical environments—land and sea as well as air and space. **It provides freedom *to* attack as well as freedom *from* attack. Success in air, land, sea, and space operations depends upon air and space superiority.** *Air and space power is so flexible and useful, there will be many demands that it be diverted to other tasks before any measure of air and space superiority is secured. That is a false economy that ultimately costs more in long term attrition and ineffective sorties.* In some situations, the weight of enemy attacks may demand maximum support to friendly surface forces. Nevertheless, attaining the required degree of air and space superiority to enable effective maximum support is an equally critical competing demand. The theater commander must correctly balance requirements, and it is the role of the air commander to articulate the crucial enabling role of air and space superiority.

- Various degrees of control are possible. *Superiority is that degree of dominance that permits friendly land, sea, and air forces to operate at a given time and place without prohibitive interference by the opposing force. Supremacy is that degree of superiority wherein opposing air and space forces are incapable of effective interference anywhere in a given theater of operations.* While air and space supremacy is most desirable, it may exact too high a price. Superiority, even local or mission-specific superiority, may provide sufficient freedom of action to accomplish assigned objectives.

- Relaxing pressure on the enemy's air forces may allow them to gain air superiority, with disastrous results. For example, Hitler's decision to divert the Luftwaffe from direct attack on the Royal Air Force (RAF) to terror bombing of cities allowed the RAF the breathing space it desperately needed to reconstitute. Field Marshal Bernard Montgomery once commented, *"If we lose the war in the air, we lose the war, and we lose it quickly."* To gain control of the air, *friendly forces must counter enemy air, missile, and air defense artillery threats not only to assure full force protection for surface forces, but also to enable full flexibility to conduct parallel warfare across the theater of operations.*

- Like air superiority, *space superiority provides the freedom to conduct operations without significant interference from enemy forces.*

Although we have not yet had to fight for space superiority, in future conflicts other nations may have a variety of space-based capabilities, from force application and information warfare to sophisticated imaging and communications systems. *To ensure that our forces maintain the ability to operate without being seen, heard, or interfered with from space, it is essential to gain and maintain space superiority.* Defensive counterspace operations are a major concern of the JFC today in order to preserve the ability to conduct ISR, to command and control forces, and to communicate and navigate.

Precision Engagement

Increasingly, **air and space power is providing the "scalpel" of joint service operations—the ability to forgo the brute force-on-force tactics of previous wars and apply discriminate force precisely where required.** Precision engagement is the ability to command, control, and employ forces to cause discriminate strategic, operational, or tactical effects. **The Air Force** *is clearly not the only Service capable of precise employment of its forces, but it* **is the Service with the greatest capacity to apply the technology and techniques of precision engagement anywhere on the face of the earth in a matter of hours or minutes.** Integral to precision engagement in combat operations is the ability to have superior situational awareness, and to mass force anywhere and attack any facet of the enemy's power. However, reliable precision air weapons, combined with high-speed, high-capacity modern information systems, have redefined the meaning of mass. Mass no longer means many hundreds of aircraft attacking a single target, as it did during World War II or the Korean conflict. **It is the effect, rather than forces applied, that is the defining factor.** *In addition to the traditional application of force, precision engagement includes nonlethal as well as lethal force.* Functions such as the close surveillance of peace agreements between belligerents by airborne and space-based assets, the employment of Air Force Special Operations Forces in small-scale but precise operations, or the rapid response of airlift to the source of an erupting humanitarian disaster are prime examples of precision engagement, a global capability not only to win wars, but also to provide the ability to drive crises to peace. *The fact that air and space power can concentrate in purpose—whether or not massing in location or concentrating in time—challenges traditional understandings of precision and* **creates opportunity for a different approach to harnessing military power to policy objectives.**

Information Superiority

Information superiority is the ability to collect, control, exploit, and defend information while denying an adversary the ability to do the same and, like air and space superiority, includes gaining control over the information realm and fully exploiting military information functions. Information superiority was the first function of the Air Force. Early balloons and airplanes became spotters for Army commanders who wanted information in order to gain an advantage over an adversary and improve their decisions on the battlefield. Today, **the Air Force is the major operator of sophisticated air- and space-based intelligence, surveillance, and reconnaissance systems and is the Service most able to quickly respond to the information they provide.** For example, information superiority enabled the US to make a timely response to the October 1994 Iraqi force build-up which threatened Kuwait, possibly preventing a second invasion of that country. Information superiority likewise contributed significantly in convincing the belligerents in Bosnia to negotiate and conclude the Dayton Accords.

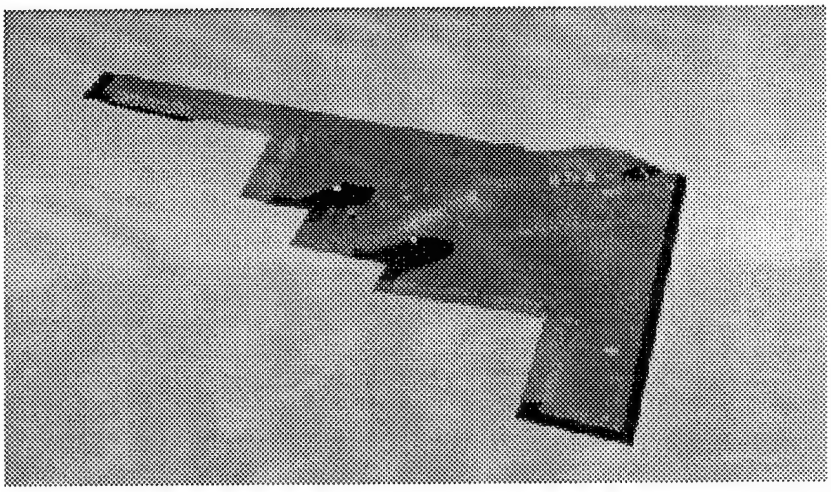
Dominating the information spectrum is as critical to conflict now as controlling air and space, or as occupying land was in the past, and

Global surveillance provides an information superiority advantage.

is seen as an indispensable and synergistic component of air and space power. **Whoever has the best ability to gather, understand, control, and use information has a substantial strategic advantage.** Emerging concepts and tools of information warfare allow commanders to deny, destroy, corrupt, or otherwise manipulate an adversary's information and command and control. *One of a commander's primary tasks is to gain and maintain information superiority, with the objective of achieving faster and more effective command and control of assigned forces than the adversary.* The eventual goal of information superiority is greater than just having more information than an opponent; *it must be accurate and usable, and must not overwhelm the user.* Information superiority efforts include attempts to develop the ability to consistently react to a situation and make accurate decisions more rapidly than the enemy. This places increased strain on enemy leaders and forces, eventually causing shock at unexpected events which increases the "friction" of war. Dominating the information spectrum not only improves the speed and quality of our observe-orient-decide-act loop (OODA-loop), but also *significantly degrades and influences the adversary's cycle time as well as the quality of their information and, ultimately, shapes the adversary's perception of the situation and courses of action.*

Global Attack

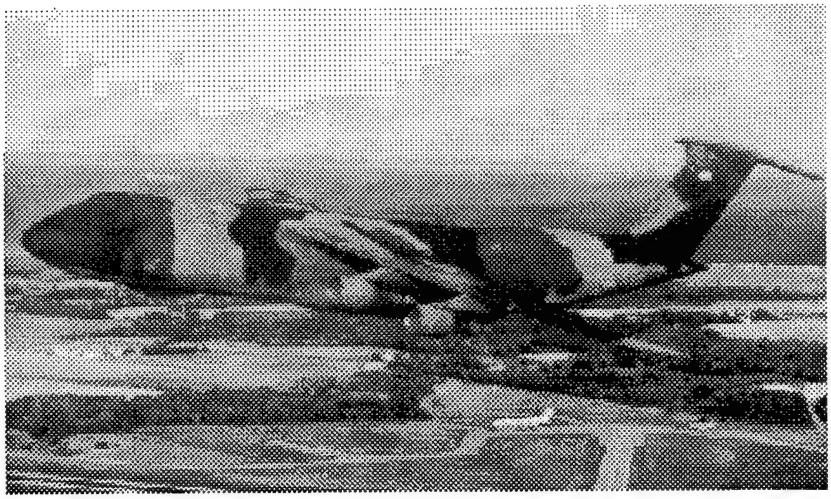
All military Services provide strike capabilities, but the ability of the Air Force to attack rapidly and persistently with a wide range of munitions anywhere on the globe at any time is unique. Depending on the assigned mission and the specific system required, responsiveness of air and space forces can be instantaneous. *The decline of both total force structure and worldwide bases has decreased the size of our forward presence and forced the US military to become primarily an expeditionary force.* The Air Force, with its growing space force, its intercontinental ballistic missiles, and its fleet of multirole bombers and attack aircraft supported by a large tanker fleet, is ideally suited to such operations. *Our Service is able to rapidly project power over global distances and maintain a virtually indefinite "presence" over an adversary.* When combined with our inherent strategic perspective, *Air Force operations can be both the theater's first and potentially most decisive force in demonstrating the nation's will to counter an adversary's aggression.* The obvious ability to continuously observe an adversary's actions from space and then, when provoked, to swiftly respond with a wide variety of capabilities provides the true essence of deterrence.



The B-2 Spirit

Rapid Global Mobility

Rapid global mobility refers to the timely movement, positioning, and sustainment of military forces and capabilities through air and space, across the range of military operations. In the post-Cold War era, **global mobility has increased in importance to the point where it is required in virtually every military operation.** US forces overseas have been reduced significantly, while *rapid power*



The C-5 Galaxy

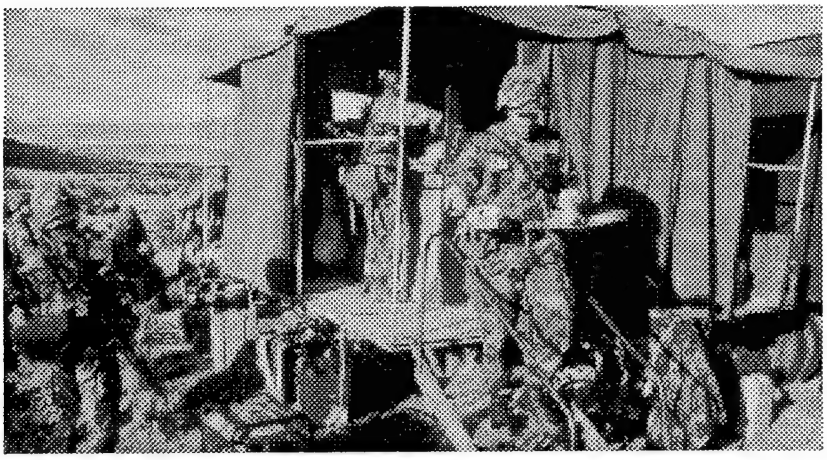
projection based in the continental United States (CONUS) has become the predominant military strategy. DESERT SHIELD and DESERT STORM showed America's adversaries just how quickly our air forces can mobilize, deploy, and prepare for war—advanced elements were provided within hours of the decision to deploy. New, lean logistics measures have shifted the emphasis from large parts inventories to rapid resupply through strategic airlift. The information revolution and its corresponding revolution in communications systems have allowed us to better manage the massive volume of information required to keep track of widely dispersed force deployments and shifting supply inventories. This has resulted in efficiencies that foster an improvement in the ability to support operations with a smaller force and support structure.

In theaters where only minimal forces are forward deployed, the value of global mobility is maximized since the key to successful contingency operations in the event of hostilities is the capability of the US to rapidly deploy forces to aid friendly nations. Sealift forces provide mobility and in many instances provide more total lift capacity, but **it is the particular competence of air and space forces to most rapidly provide what is needed, including weapons on target and an increasing variety of surface force components, where it is needed.** Now, bombers, fighters, missiles, airlifters, and space systems can transit global distances in minimum time to directly achieve strategic objectives, whether to dissuade, deter, contain, inhibit, disrupt, destroy, supply, or support.

Agile Combat Support

Vital aeromedical services in action.

How the Air Force sustains the forces we deploy forward is every bit as critical as what is deployed and how it gets there. **The need to provide highly responsive force support** is certainly not unique to the Air Force, but a force **that is poised to respond to global taskings within hours must also be able to support that force with equal facility.** This includes all elements of a forward base-support structure:



Care and feeding of deployed airmen.

maintenance, supply, transportation, communications, services, engineering, security, medical, and chaplaincy. *Each of these areas must be integrated to form a seamless, agile, and responsive combat support system of systems.* Many of the same recent improvements in communications that have allowed the Air Force to provide precise global engagement capabilities are providing the ability to integrate information and transportation technologies to achieve rapid improvements in the ability to provide truly responsive support. *The eventual objective of the improvements designated under the agile combat support concept will be both to support functions more responsively and effectively as well as to reduce the overall "footprint" of forward-deployed support elements.* Emphasis on compact and multiuse equipment, increased dependability and less redundancy, enhanced supply commonality, and the ability to reliably reach back to nondeployed units and agencies for support previously required in-theater will all be central to true agile combat support.

Importantly, although support to contingency operations is absolutely critical to our success as a force, agile combat support is not just a concept for deployed operations. Every facet of our Service must be focused on providing what ultimately is **combat support,** *whether it is better educated warriors, better home-base support for members and their families, better methods to manage our personnel system, or more efficient processes to conduct business—those things that keep our people trained, motivated, and ready.* Equally important to a technologically dependent Service like our own is **agility**—agility *in our acquisition and modernization processes, in our educational courses, in our organizations, in our innovation to meet future challenges, and in our ability to adapt to the changing world around us.*

THE AIR FORCE AND *JOINT VISION 2010*

Any discussion of Service doctrine would be incomplete without surfacing the relationship of current doctrine and capabilities to the emerging joint vision of the future. *Joint Vision 2010 (JV 2010)* **guides all the Services into the next century with its vision of future warfighting.** That vision must be debated and vetted in the context of proven doctrine while at the same time we search for and refine improved constructs for the application of air and space power.

Recognizing improvements in technology and information systems, *JV 2010* **sets forth four overarching operational concepts:** *dominant maneuver, precision engagement, focused logistics,* and *full-dimensional protection.* Each of these new operational concepts reinforces the others, allowing joint forces to achieve massed effects from more dispersed forces. *The aggregate of these four concepts allows joint forces to dominate the full range of military operations from humanitarian assistance through peace operations to the highest intensity conflict.* Such *full-spectrum dominance* allows joint forces to prevail across the range of national military strategy from peacetime engagement to deterrence and conflict prevention to fighting and winning in combat.

Air Force core competencies of air and space superiority, rapid global mobility, global attack, agile combat support, precision engagement, and information superiority coupled with the speed, flexibility, and the global nature of its reach and perspective produce unique

contributions to the joint concepts of *dominant maneuver, precision engagement, focused logistics,* and *full-dimensional protection.* **Air and space forces today contribute directly to achieving each of these joint concepts and the ultimate goal of full-spectrum dominance. The challenge is to continue to evolve our capabilities and doctrine to ensure that air and space power remains relevant to emerging threats and opportunities.**

Air and space power can control the depth, breadth, and height of the battlespace to allow joint forces to gain decisive advantage. *The ability of airpower to engage at any place in minimum time, from either centralized or widely dispersed locations, and to shape the conflict, describes an important aspect of dominant maneuver.* **Air and space forces are inherently maneuver forces with unmatched organic lethal and nonlethal "firepower."** These forces have the capability to orchestrate maneuver on a global scale and directly achieve strategic objectives.

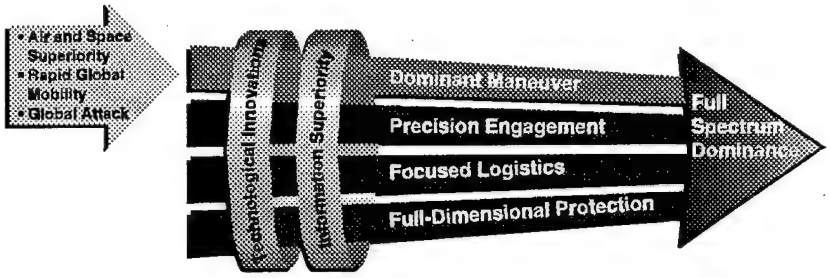


Figure 2.4. Dominant Maneuver

The operational capability of airpower to project combat power rapidly anywhere in the world, without being physically based everywhere in the world, supports dominant maneuver on both a regional and a global basis. The ability to strip away an adversary's own air and space power and place the adversary's forces under constant threat of attack from American airpower forces the adversary to maneuver at the discretion of the joint force commander—another facet of dominant maneuver. The freedom of action for joint forces made possible through air and space superiority, coupled with the leverage offered by information superiority, enables all joint forces to gain advantages in achieving dominant maneuver.

Precision has been an integral aspect of air strategy since the advent of daylight bombing doctrine in the 1930s. From the earliest attempts at precision bombing during World War II to the deadly

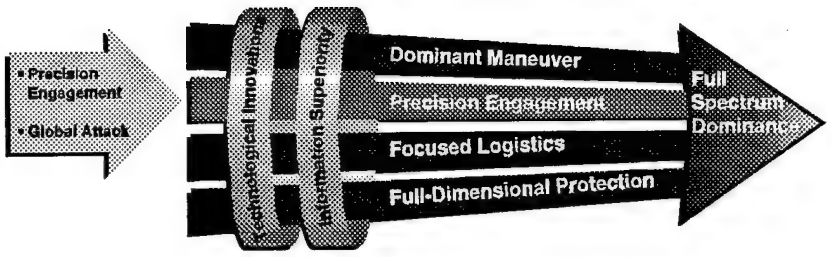


Figure 2.5. Precision Engagement

accuracy of today's precision-guided munitions, the US continues to develop the most accurate aerial munitions employed in combat. But **precision is not limited to kinetic weapons.** *It may mean precisely delivering materiel or forces to a forward location. It may be precisely implanting a computer virus in some adversary's command and control or information network. Accurate weaponry, maneuver, delivery, and information combine to make precision engagement a critical element of joint force employment.*

As employment concepts become more carefully tailored, so do the accompanying support concepts. *Focused logistics* **requires a combination of information and logistics technologies that ensures required supplies arrive at the right time at the right place every time, no matter the level of conflict.** To that end, our Air Force's competency of *agile combat support* is key. Increased information about, and control of, the asset pipeline ensures rapid movement of supplies directly from factory to flight line. This process *provides a "reach back" sustainment capability that gives our forces a smaller logistical footprint in the theater.* This reduced logistics "tail" allows the commander in chief (CINC) more flexibility in deploying and employing forces rapidly, requires fewer security resources to protect, and provides fewer lucrative targets to the enemy.

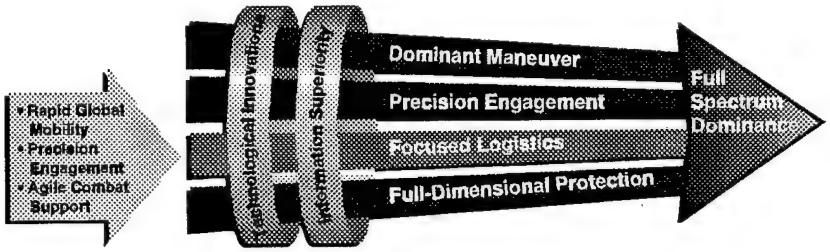


Figure 2.6. Focused Logistics

In responding to theater needs, this agile system of support also provides the theater commander significantly improved combat capability. Moving and tracking materiel by commercial carriers and advanced airlift aircraft improves battlefield distribution for users and increases the system's ability to respond quickly to change. *Tailoring and developing smaller, more capable weapons and support systems, coupled with the technical ability to reach back to nondeployed agencies and systems for support, further reduces the in-theater footprint and logistical load.*

Air and space power provides a responsive and flexible force capable of attaining *air and space superiority*, **the basis for** *full-dimensional protection*. The flexibility of air forces provides a means for quickly countering unexpected threats and for exploiting fleeting opportunities.

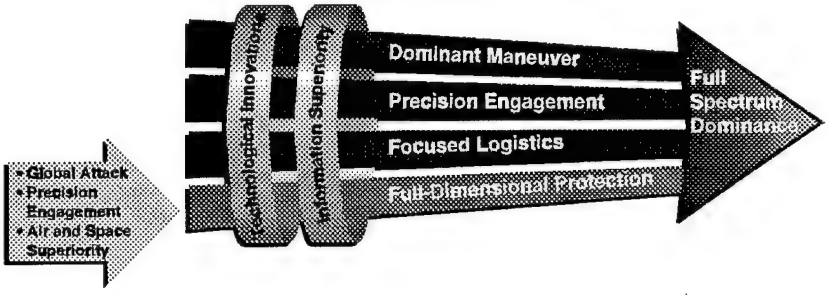


Figure 2.7. Full-Dimensional Protection

Air and space superiority provides significant freedom of action for all joint forces. Once this state of control is achieved, all forces enjoy freedom of action—freedom from attack and freedom to attack. As the enabler of all to follow, air and space superiority remains a critical prerequisite for all joint force operations.

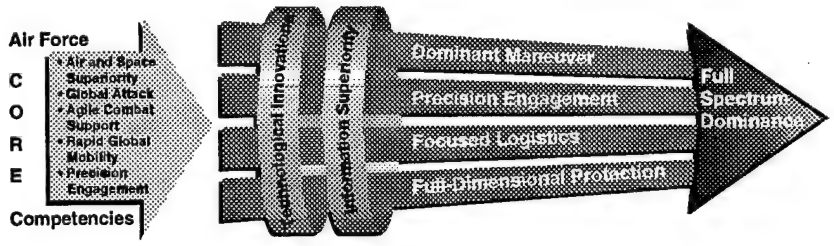


Figure 2.8. Core Competencies

Air Force core competencies make significant and multidimensional contributions to full-spectrum dominance through *dominant maneuver, precision engagement, focused logistics,* **and** *full-dimensional protection,* enhanced by *information superiority* **and technological innovations.** The way ahead is clear. In order for air and space power to continue to provide significant contributions to the challenge of a rapidly changing and uncertain future, we must hone our present competencies and lean forward in our doctrine while seeking solutions to the asymmetric strategies that our adversaries are sure to develop. Strategies to neutralize, circumvent, or offset our strengths must be checkmated. Importantly, we must guard against expecting our adversaries to react with our values, preferences, frames of reference, and military strategies. *We must continue to seek new, revolutionary, and imaginative ways to employ air and space power and continue to provide the United States with even more capability to pursue national and military objectives with reduced risk and cost in casualties, resources, and commitment.*

THE NATURE OF AIR AND SPACE POWER—— A STRATEGIC PERSPECTIVE

> ***Both the army and navy may well possess aerial means to aid their respective military and naval operations; but that does not preclude the possibility, the practicability, even the necessity, of having an air force capable of accomplishing war missions solely with its own means.***
>
> **Giulio Douhet, 1921**

The US Air Force is a truly global strategic asset that can protect national interests anywhere on earth in a matter of hours. Its air and space forces through their inherent speed, range, and precision can respond to national requirements by delivering precision strikes, supplies, or surface forces where they are needed, when they are needed. With its expanding space and information capabilities, the Service is rapidly developing the ability to place an "information umbrella" over friends and foes alike. This will provide national political and military leaders with unprecedented knowledge of world events; foster rapid, accurate military decisions; and directly complement the Service's airpower forces. *The US Air Force, in fielding advanced, highly effective and lethal systems and by concentrating on operations at the strategic and operational levels of war, provides national leaders and joint force commanders a unique capability across the range of military operations.*

Early airpower advocates argued that airpower could be decisive and achieve strategic effects by itself. While this view of airpower was not proved during their lifetimes, **the more recent history of air and space power application, especially post–DESERT STORM, has proven that air and space power does now have the potential to be the dominant and, at times, the decisive element** of combat in modern warfare. We have also learned, contrary to conventional wisdom, that **air and space forces can be supported by surface forces in attaining assigned objectives as well as acting to support them.** Air and space power has changed the way wars are fought and the manner in which the United States pursues peacetime efforts to expand its influence.

Wars have been traditionally fought in three phases: halt the invading force, build up combat power and weaken the enemy, and then mount the decisive counteroffensive. Rapid-reaction or in-place forces are called upon to halt the initial attack and perhaps trade space to buy time for a build-up of land forces and the inevitably planned counterattack. Classically, the end-state has been seen as the product of the counterattack. Additionally, the three phases, while necessary in this view to complete military victory, are not time urgent but sequential and generally treated with equal urgency (see fig. 2.9).

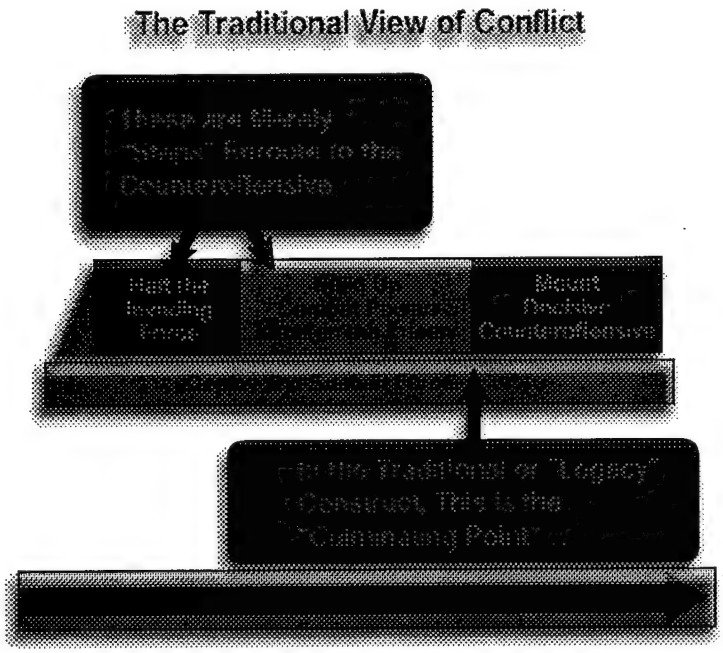


Figure 2.9. The Traditional View of Conflict

But the nature of the threats and the way we choose to deter and fight those conflicts may change. The United States may be faced with an adversary who seeks to offset United States' advantages by using asymmetric means and threatening the use of chemical and/or biological weapons, information attacks, terrorism, urban warfare, or anti-access strategies. Thus, America must quickly seize the initiative from the aggressor. *Military capability that is vulnerable to preset time lines risks attack of those time lines. Delay in decisively and quickly halting an enemy may force a difficult and costly campaign to recover lost territory.* Additionally, the asymmetric threats of lost coalition support, lost credibility, and incentives for other adversaries to begin conflict elsewhere are real. Thus, a new way of looking at conflict is emerging (see fig 2.10).

A New View of Conflict

In this view of warfare, the halt phase may be planned as the conflict's decisive phase, not as a precursor necessarily to a build-up of ground forces. *The point of the "decisive halt" is to force the enemy beyond their culminating point through the early and sustained overwhelming application of air and space power.* As the "decisive halt" phase unfolds, continuing assessments will be ongoing. As the initiative and options of the aggressor decrease over time, US and allied options or "branches and sequels" increase. Security objectives may have been attained in the halt, follow-on diplomatic initiatives may conclude the conflict, or a build-up and counteroffensive may in fact

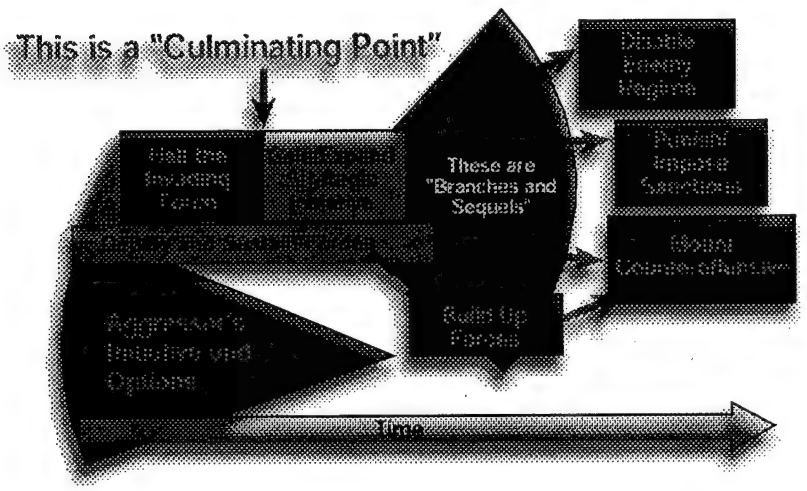


Figure 2.10. A New View of Conflict

be required. **The global range, speed, and flexibility of air and space forces bring the "decisive halt" opportunity to reality.**

Just as air and space power has changed how we look at traditional warfare, it has also changed the face of crisis and peacetime engagement. Air and space forces may be applied to international situations across the range of military operations and offer critical, rapid global capabilities to the nation. It can help **shape** *the international environment by promoting regional stability, thus preventing emergence or growth of conflicts.* It can rapidly **respond** *to crises across the spectrum of conflict to deter, resolve, contain, or engage and win.* Additionally, air and space forces, by their technological and flexible nature, help **prepare** *for the future with innovation and hedges against asymmetric strategies of potential adversaries.* In the peaceful extension of national influence, air and space power participates as an instrument of national policy through military civic actions and military assistance programs. Air and space forces can deter an adversary from taking actions contrary to US or allied interests by providing the capability to project potent military power anywhere on earth in a matter of hours. It is the knowledge that air and space intelligence, surveillance, and reconnaissance systems are closely watching their activities; that long-range bomber and air mobility forces are ready to respond over intercontinental ranges with a large variety of capabilities; that land-based fighter and attack aircraft are available to sweep the skies and prevent movement of ground forces, which gives an adversary's leadership reason to pause and reconsider their objectives and plan of action.

Air and space power has become the great enabler that allows all land, sea, and special operations forces to optimize their contributions to America's national security; *without rapid global airlift and air refueling, timely response to crises would be virtually impossible. Without our global information gathering and dissemination systems, all operations would proceed much more ponderously, and with greater risk of surprise. Without air superiority, air and surface operations would be exceedingly hazardous, if doable at all.*

All Service air arms operate in the third dimension to attain strategic-, operational-, and tactical-level objectives. However, **it is the global strategic perspective that differentiates Air Force forces from the air components of the other Services. The US Air Force's assigned mission is to "organize, train, equip, and provide forces for the conduct of prompt and sustained combat operations in the air"—to provide the nation's air and space power**—*not in support of other tasks as with the air arms of the other*

Services but **as its sole reason for being.** Its flexible mix of forces provides combatant commanders a capability that is responsive to the post-Cold War realities of reduced forward deployments—a force that complements the tactical/operational perspective of the other Services with a capability to perform rapid global range, strategic/operational-level operations.

The first operations conducted by airmen were designed to gain information superiority. Subsequently, air-to-air combat evolved as a means to deny information superiority to an adversary. **Information operations from air and space and, today, in cyberspace, remain key elements of what our Service brings to the Nation, the joint force commander, and component and coalition forces.** *Information operations are actions taken to gain, exploit, defend, or attack information and information systems.* They involve our extensive capabilities to provide global awareness based on our surveillance, reconnaissance, and intelligence assets; our ability to command and control forces; our global navigation, weather, and communications capabilities; our ability to provide security and guarantee access to information and information systems; and our ability to attack an adversary's information and information systems by both kinetic and non-kinetic means. *In describing information operations, it is important to differentiate between "information in war" and "information warfare." The second element, information warfare, involves such diverse activities as psychological warfare, military deception, electronic combat, and both physical and cyber attack.* Information operations both enable air, space, and surface operations and, in some circumstances, constitute an emerging form of warfare.

Thus, **operations in each of the three realms of air, space, and information are synergistic and overlapping. Therefore, air and space power is defined as the integrated application of air and space systems to project global strategic military power.** Understanding the total capabilities of air and space forces, and what they provide the joint force commander, is critical to understanding asymmetric leverage and the potent capability that integrated air and space power brings to the fight—and the strategic perspective that must guide it.

CHAPTER THREE

AIR AND SPACE POWER

The advent of air power, which can go straight to the vital centers and either neutralize or destroy them, has put a completely new complexion on the old system of making war. It is now realized that the hostile main army in the field is a false objective, and the real objectives are the vital centers.

Brigadier General William "Billy" Mitchell, 1930

EMPLOYING AIR AND SPACE POWER

The Air Force's basic functions are **the broad, fundamental, and continuing activities of air and space power.** They are not necessarily unique to the Air Force; elements of other Services may perform them or similar activities to varying degrees, *but together they do represent the means by which Service forces accomplish the missions assigned to joint force commanders by the NCA and combatant commanders.* These basic functions have evolved steadily since airpower's inception and are reflected in the functions the Department of Defense has assigned to the US Air Force in Department of Defense Directive 5100.1. This directive states that the Air Force is the only *US Service*

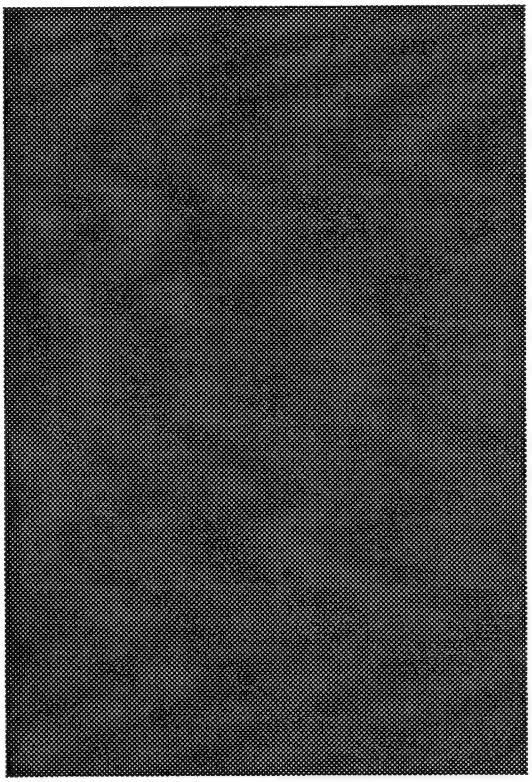


Figure 3.1. Air and Space Power Functions

specifically directed to "organize, train, equip, and provide forces for" both the "conduct of prompt and sustained combat operations in the air" and "for strategic air and missile warfare." US Air Force forces employ air and space power globally through these basic functions to achieve strategic-, operational-, and tactical-level objectives in war and military operations other than war. **Most air and space forces can perform multiple functions to achieve various strategic, operational, or tactical effects; some perform them in unique ways.** *It is this inherent versatility when combined with the speed, flexibility, and global nature of our reach and perspective that generates the unique Air Force contribution to joint force capabilities.* These battle-proven functions can be conducted at any level of war and enable the Air Force to shape and control the battlespace.

AIR AND SPACE POWER FUNCTIONS

Counterair

Counterair consists of operations to attain and maintain a desired degree of air superiority by the destruction or neutralization of enemy forces. *Counterair's two elements—offensive counterair and defensive counterair—enable friendly use of otherwise contested airspace and disable the enemy's offensive air and missile capabilities to reduce the threat posed against friendly forces.* **The entire offensive and defensive counterair effort should be controlled by one air officer under the centralized control, decentralized execution concept** in order to assure that concentration of effort and economy of force requirements are met. Air and space superiority normally should be the joint force commander's first priority for air and space forces.

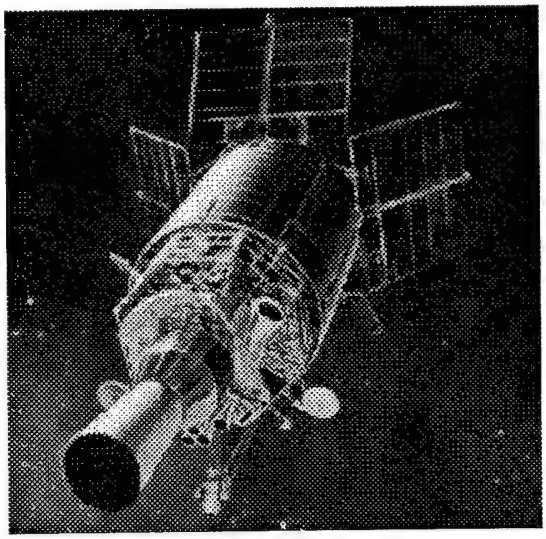
- **Offensive Counterair (OCA).** Because air and space forces are inherently offensive and yield the best effect when so employed, **OCA is often the most effective and efficient method for achieving the appropriate degree of air superiority.** *This function consists of operations to destroy, neutralize, disrupt, or limit enemy air and missile power as close to its source as possible and at a time and place of our choosing.* OCA operations include the suppression of enemy air defense targets, such as aircraft and surface-to-air missiles or local defense systems, and their supporting C^2. OCA operations protect friendly forces and vital interests by destroying or neutralizing enemy offensive air and missile threats before they bring their effects to bear against us. *This is freedom* **from** *attack that enables action by friendly forces—freedom* **to** *attack.*

The aircraft and missile threat may include fixed- and rotary-wing attack aircraft, reconnaissance aircraft, unmanned aerial vehicles, air-, land-, and sea-launched cruise missiles, ballistic missiles, and air-to-surface missiles.

- **Defensive Counterair (DCA).** *DCA concentrates on defeating the enemy's offensive plan and on inflicting unacceptable losses on attacking enemy forces.* DCA is synonymous with air defense and consists of active and passive operations to defend friendly airspace and protect friendly forces, materiel, and infrastructure from enemy air and missile attack. It entails detection, identification, interception, and destruction of attacking enemy air and missiles, and normally takes place over or close to friendly territory.

Counterspace

Counterspace involves those operations conducted to attain and maintain a desired degree of space superiority by the destruction or neutralization of enemy forces. *The main objectives of counterspace operations are to allow friendly forces to exploit space capabilities, while negating the enemy's ability to do the same.* They can be conducted by air, space, land, sea, or special operations forces. Counterspace operations include both offensive and defensive components.



Defense Support Program (DSP) satellites are a key part of North America's early warning systems.

- **Offensive Counterspace (OCS).** *OCS operations destroy or neutralize an adversary's space systems or the information they provide at a time and place of our choosing through attacks on the space, terrestrial, or link elements of space systems.* OCS operations are conducted to achieve five major goals: deception, disruption, denial, degradation, or destruction of space assets or capabilities. These operations may include military operations such as surface-to-

surface and air-to-surface attacks against space support facilities or space payloads before they are placed in orbit, as well as jamming of enemy satellite uplink and downlink frequencies. Counterspace operations initiated at the onset of hostilities can result in an immediate advantage in space capabilities and in early space control. Continued suppression of the space threat may be required in conjunction with other offensive actions under way within the joint area of operation.

- **Defensive Counterspace (DCS).** *DCS operations consist of active and passive actions to protect our space-related capabilities from enemy attack or interference.* The objective of active counterspace defense measures is to detect, track, identify, intercept, and destroy or neutralize enemy space and missile forces. The objective of passive counterspace defense is to reduce the vulnerabilities and increase the survivability of friendly space forces and the information they provide. These may include operations such as designing survivability features into satellites, satellite maneuver, emission control, and decoys.

Counterland

Counterland involves those operations conducted to attain and maintain a desired degree of superiority over surface operations by the destruction or neutralization of enemy surface forces. The main objectives of counterland operations are to *dominate the surface environment and prevent the opponent from doing the same.* Although normally associated with support to friendly surface forces, *counterland* is a flexible term that can encompass the identical missions without friendly surface-force presence. *This independent or direct attack of adversary surface operations by air and space forces is the essence of asymmetric application and is a key to success during operations to decisively halt an adversary during initial phases of a conflict.* Specific traditional functions associated with air and space counterland operations are interdiction and close air support.

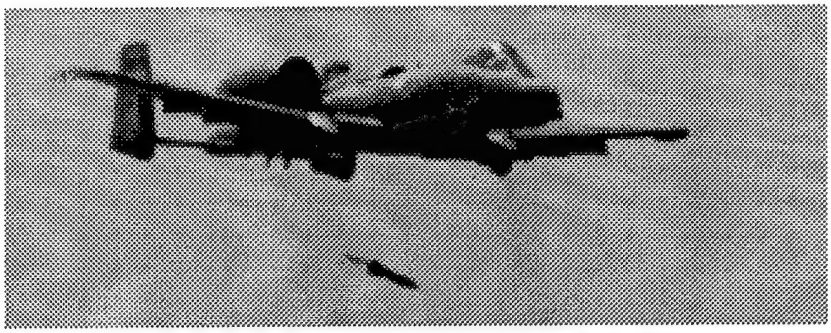
- **Interdiction. Interdiction is a form of air maneuver.** Interdiction consists of operations to *divert, disrupt, delay, or destroy the enemy's surface military potential before it can be used* effectively against friendly forces. Air interdiction's ability to delay and disrupt may have a devastating impact on the enemy's plans and ability to respond to the actions of friendly forces, even before friendly surface forces appear in the battlespace. Interdiction attacks enemy C^2 systems, personnel, materiel, logistics, and their supporting systems to weaken and disrupt the enemy's efforts and may achieve

tactical, operational, or strategic objectives. Although nontraditional in the classic sense, *information warfare may also be used to conduct interdiction by intercepting or disrupting information flow or damaging/destroying controlling software and hardware.* For example, electronic warfare could be used to prevent further enemy incursions by disrupting C^2 of advancing enemy forward-deployed forces through jamming of communications relays.

- Through interdiction operations, a commander can exploit airpower's ability to concentrate firepower quickly at any point throughout the theater. Depending on the JFC's overall campaign plan, air interdiction can have a variety of target sets, such as C^2 systems, logistics, movement networks, or follow-on forces. It can also achieve objectives by destruction, blockage, channelization, disruption, or by inducing systemic inefficiencies. **Interdiction and surface-force maneuver can be mutually supporting.** *Surface-force operations can support interdiction operations* by forcing the enemy to consume supplies at an accelerated rate and to move forces to meet emerging threats. These movements and re-supply efforts then become targets or objectives for air and space forces. *Interdiction can also support surface operations* by forcing the enemy to react to friendly interdiction, thereby exposing vulnerabilities to surface force maneuver forces. Additionally, attacks on enemy C^2 systems interfere with an adversary's ability to effectively mass, maneuver, withdraw, supply, and reinforce his surface forces.

- **Joint force interdiction needs the direction of a single commander who can exploit and coordinate all the forces involved, whether air-, space-, surface- or information-based.** *The joint force air component commander (JFACC) is the supported commander for air interdiction and uses JFC priorities to plan and execute the theater wide interdiction effort.* Joint force air forces provide air interdiction that is responsive across the theater, unconstrained by battlefield boundaries. They should be free to attack the right targets with the right munitions at the right time. Surface, air, and special operations commanders need to cooperate to identify the crucial targets; decide when, where, and how to attack them; and determine how surface operations and interdiction can best complement each other to achieve the JFC's objectives.

- **Close Air Support (CAS). CAS consists of air operations against hostile targets in close proximity to friendly forces;**



The A-10 Thunderbolt II

further, these operations require *detailed integration* of each air mission with the fire and movement of those forces. CAS *provides direct support to help friendly surface forces carry out their assigned tasks.* Commanders can build on the tactical effects of CAS by orchestrating it with other surface and air operations to produce operational-level effects. In fluid, high-intensity warfare, the need for tight control, the unpredictability of the tactical situation, and the proliferation of lethal ground-based air defenses make CAS especially challenging.

- **CAS produces the most focused but briefest effects of any counterland mission; by itself, it rarely achieves campaign-level objectives.** However, *at times it may be the more critical mission by ensuring the success or survival of surface forces.* CAS should be planned to prepare the conditions for success or reinforce successful attacks of surface forces. CAS can halt attacks, help create breakthroughs, cover retreats, and guard flanks. To be most effective, however, CAS *should be used at decisive points in a battle* and should normally be massed to apply concentrated combat power and saturate defenses.

Countersea

Countersea is a collateral function, defined by Joint Pub 1-02, *Department of Defense Dictionary of Military and Associated Terms*, as "a mission other than those for which a force is primarily organized, trained, and equipped, that the force can accomplish by virtue of the inherent capabilities of that force." *Countersea functions are an extension of Air Force functions into a maritime environment.* The identified specialized collateral functions are sea surveillance, antiship warfare, protection of sea lines of communications through antisubmarine

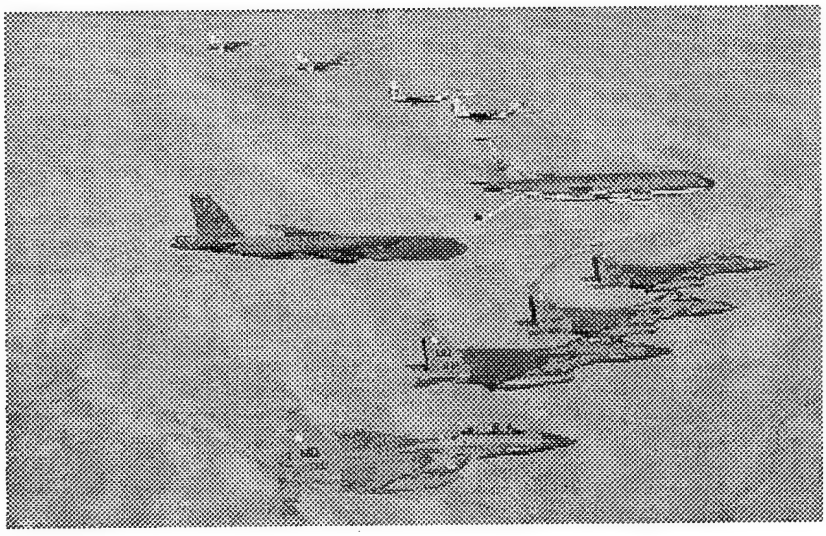
and antiair warfare, aerial minelaying, and air refueling in support of naval campaigns. *Many of these collateral functions translate to primary functions of air and space forces such as interdiction, counterair, and strategic attack.* As with the air and space functions, countersea operations are designed to achieve strategic-, operational-, or tactical-level objectives in the pursuit of joint force objectives; and as with counterair, counterland, counterspace, and counterinformation, *the objective is to gain control of the medium and, to the extent possible, dominate operations either in support of naval forces or independently.*

Strategic Attack

Strategic attack is defined as those operations intended to directly achieve strategic effects by striking at the enemy's COGs. These operations are designed to achieve their objectives without first having to necessarily engage the adversary's fielded military forces in extended operations at the operational and tactical levels of war. In classic theater warfare, those objectives typically centered on destruction or disruption of the enemy's COGs, *which were the characteristics, capabilities, or localities from which a force derived its freedom of action, physical strength, or will to fight.* This was the objective during both World War II and DESERT STORM. In modern operations the adversary may be a large nation state with a highly sophisticated political, economic, and military structure or a nonstate terrorist group that relies on clandestine support. Regardless of the opponent, it is the operation's direct impact on assigned strategic objectives that is important. Strategic attack objectives often include producing effects to demoralize the enemy's leadership, military forces, and population, thus affecting an adversary's capability to continue the conflict. *This function may be carried out in support of a theater CINC or as a standalone operation by direction of the NCA.*

Strategic attack may also be conducted against fielded forces. For example, strategic attack may be conducted against identified COGs such as major reserves or politically significant military formations, space launch and support elements, or forces used for strategic nuclear attack. Strategic attacks can be conducted independently by air and space forces or in conjunction with friendly land and naval forces and will often overlap into a "gray area" with other functions such as interdiction and counterair. However, *the determining factor is that strategic attack should affect the enemy's entire effort rather than just a single action, battle, or campaign.*

- **Strategic attack should produce effects well beyond the proportion of effort expended in their execution.** It is the effect of



A package consisting of a B-52, F-15s, F-16s and a KC-135. The target, not the weapon system, determines if an attack is strategic.

a relatively few well-placed systems, weapons, or actions on a few targets or target sets of extreme value that distinguishes strategic attack from other functions, especially when compared to the forces typically needed for tactical- or operational-level actions. **If properly applied, strategic attack is the most efficient means of employing air and space power.** *It provides the theater commander with the option of creating decisive, far-reaching effects against an adversary while avoiding loss of life and expenditure of treasure.*

- **Strategic attack is a function of objectives or effects achieved, not forces employed.** It is not limited to nuclear operations, heavy bombers and intercontinental ballistic missiles (ICBMs), or total devastation of an enemy's war-making capacity. In fact, *many strategic actions tend to be nonnuclear conventional or special operations against more limited war or contingency operations objectives, and will increasingly include attack on an adversary's information and information systems.* The means, methods, and aim of strategic attack can be tailored to the objective or objectives being sought. Strategic attack can be a practical and potent option and can utilize a variety of weapons, forces, tactics, or warfare to attain the desired "strategic objectives or effects."

- Normally, one of the key target systems is the enemy's command and control (C^2) system. Regardless of the nature of the adversary,

disrupting the ability to communicate can be a critical step toward achieving strategic paralysis and disunity by cutting off the enemy's political/military leadership from the civilian populace (or in case of non-state adversaries, their clandestine base of support) and fielded force. **Whether one uses aircraft, missiles, or information attack, the enemy's C^2 should always be a target of particular focus in strategic attack.**

Counterinformation

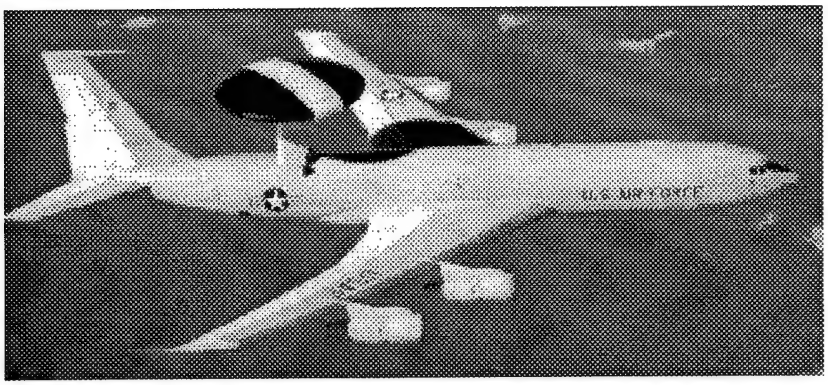
Counterinformation seeks to establish information superiority through control of the information realm. Counterinformation creates an environment where friendly forces can conduct operations without suffering substantial losses, while simultaneously denying the enemy the ability to conduct their operations. *The focus of the effort is on countering the enemy's ability to attain information advantage.* Counterinformation, like counterair and counterspace, consists of both offensive and defensive aspects.

- **Offensive Counterinformation (OCI).** OCI includes actions taken to control the information environment. *The purpose is to disable selected enemy information operations.* OCI operations are designed to destroy, degrade, or limit enemy information capabilities and are dependent on having an understanding of an adversary's information capabilities. Examples of OCI include jamming radars and corrupting data acquisition, transformation, storage, or transmissions of an adversary's information; psychological operations; deception; and physical or cyber attack.

- **Defensive Counterinformation (DCI).** *DCI includes those actions that protect our information, information systems, and information operations from the adversary.* DCI programs, such as operations security (OPSEC), information security (INFOSEC), and counterintelligence assess the threat and reduce friendly vulnerabilities to an acceptable level. Improving security procedures designed to safeguard equipment and information can prohibit unintentional and unwanted release of information.

Command and Control (C^2)

Command is the art of motivating and directing people and organizations into action to accomplish missions. Control is inherent in command. To control is to regulate forces and functions to execute the commander's intent. **C^2 includes both the process by which the commander decides what action is to be taken and the system**



The E-3 Sentry

which monitors the implementation of the decision. Specifically, *C^2 includes the battlespace management process of planning, directing, coordinating, and controlling forces and operations. C^2 involves the integration of the systems of procedures, organizational structures, personnel, equipment, facilities, information, and communications designed to enable a commander to exercise command and control across the range of military operations.* Air and space forces conduct the command and control mission to meet strategic, operational, and tactical objectives.

Air Force forces are employed in a joint force context by a joint force commander. *C^2 of those forces can be through a Service component commander or a functional component commander if more than one Service's air assets are involved. This officer, the JFACC, is the Service commander with the preponderance of air and space assets and the capability to plan, task, and control joint air and space operations.* **It is a basic principle of air and space doctrine that C^2 of air and space forces be centralized under one officer—an airman.**

Airlift

Airlift is the transportation of personnel and materiel through the air and can be applied across the entire range of military operations in support of national objectives. Airlift provides rapid and flexible options allowing military forces to respond to, and operate in, a wider variety of circumstances and time frames. A key function of the Air Force, airlift provides global reach for US military forces and the capability to quickly apply strategic global power to various crisis situations worldwide by delivering necessary forces. The power-projection capability that airlift supplies is vital since it provides the flexibility to get rapid-reaction forces to the point of a crisis with minimum delay. Accordingly, **airlift is viewed as a foundation of US**

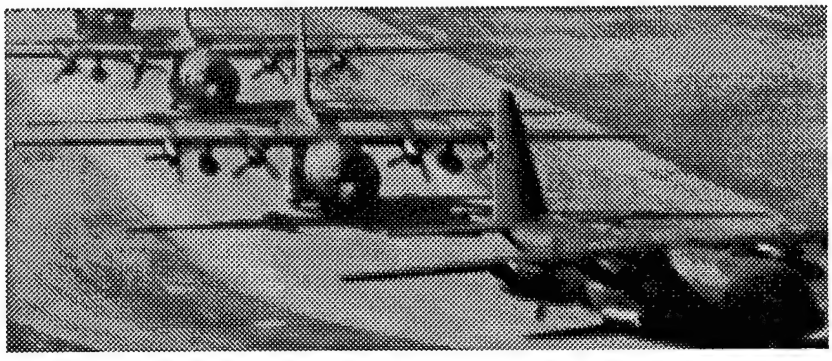
national security at the strategic level and as a crucial capability for operational commanders within a theater. *Therefore, airlift is not only a vital component of US defense policy but is critical to support of overall national policy and objectives.*

Air Force airlift can be classified as strategic (intertheater), theater (intratheater), and operational support. These classifications depend on the mission the airlift asset is performing, not on the type of airframe itself.

- *Intertheater airlift provides the air bridge that links theaters to the CONUS and to other theaters, as well as airlift within the CONUS.* The forces responsible for executing intertheater airlift missions are under the combatant command of the Commander in Chief, US Transportation Command (USCINCTRANS). Due to the global ranges usually involved, intertheater airlift is normally composed of the heavy, longer range, intercontinental airlift assets, but may be augmented with shorter-range aircraft when required.

- *Intratheater airlift provides the air movement of personnel and materiel within a CINC's area of responsibility.* Assets designated to provide intratheater airlift are either assigned or attached to that geographic CINC. This classification of airlift is generally fulfilled by aircraft capable of operation under a wide range of tactical conditions, including small, austere, unimproved airfield operations.

- *Operational support airlift* is airlift provided by assets that are an integral part of a specific Service, component, or major command (MAJCOM) and that primarily support the requirements of the organization to which they are assigned. These airlift assets are not common user assets and normally only serve in that role by exception. Operational support airlift operations provide for the



The C-130 Hercules

timely movement of limited numbers of critical personnel and cargo for the assigned user.

Air Refueling

Air refueling, along with airlift, fulfills the Air Force's contribution to the joint mobility role. **Air refueling is an integral part of US airpower across the range of military operations.** *It significantly expands the employment options available to a commander by increasing the range, payload, and flexibility of air forces. Therefore, aerial refueling is an essential capability in the conduct of air operations worldwide and is especially important when overseas basing is limited or not available.* Air Force air refueling assets are employed in five basic modes of operation: (1) support of the nuclear Single Integrated Operation Plan (SIOP), (2) support of long-range conventional strategic attack missions, (3) deployment of air assets to a theater, (4) support of an airlift line of communication or air bridge, and (5) support of combat and combat-support aircraft operating within a theater.

The KC-135 Stratotanker Refueling F-16 Fighting Falcons.

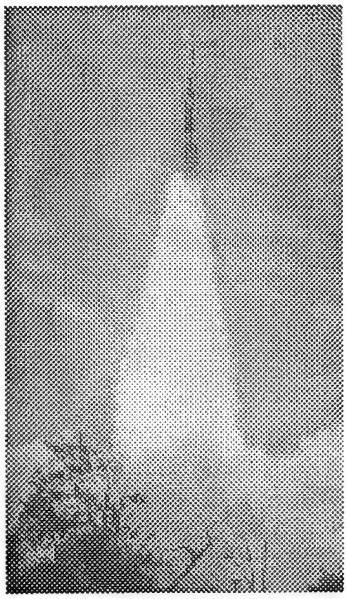
Spacelift

Spacelift projects power by delivering satellites, payloads, and materiel into or through space. During a period of increased tension or conflict, *the spacelift objective is to launch or deploy new and replenishment space assets as necessary to achieve national security objectives.* To satisfy this requirement, spacelift must be functional and flexible, capable of meeting the nation's full range of launch requirements from placing small space systems in low orbits to large space systems in high, geostationary orbits. Equally *important, spacelift must be timely and responsive to the user's needs.*

- **Launch to Deploy.** These are *launches required to initially achieve a satellite system's designed operational capability.* In this approach, space systems are launched on a predetermined schedule.

- **Launch to Sustain.** These are *launches to replace satellites that are predicted to fail or abruptly fail.* They may be scheduled well in advance or may require unscheduled operations.

- **Launch to Augment.** These are *launches to increase operational capability in response to contingency requirements, crisis, or war.* Unscheduled launches or payload adjustment on scheduled activity will likely be required.



Spacelift provides ultimate power projection.

Special Operations Employment

Special operations employment is the use of airpower operations (denied territory mobility, surgical firepower, and special tactics) to conduct the following special operations functions: unconventional warfare, direct action, special reconnaissance, counter- terrorism, foreign internal defense, psychological operations, and counterproliferation. To execute special operations, *Air Force special operations forces (AFSOF) are normally organized and employed in small formations capable of both independent and supporting operations, with the purpose of enabling timely and tailored responses across the range of military operations.*

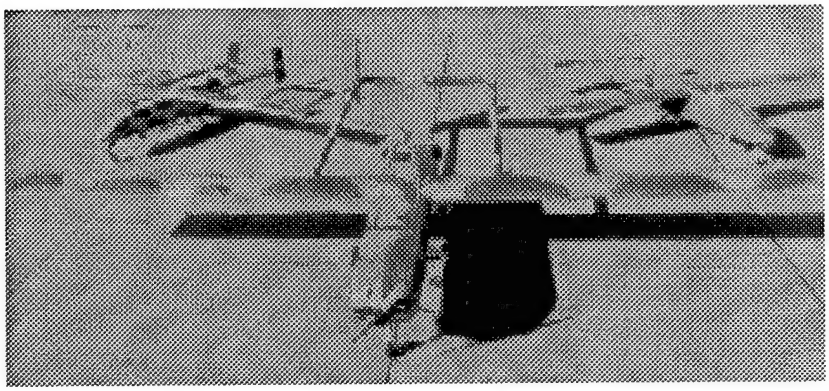
Uniquely distinctive from normal conventional operations, **AFSOF may accomplish tasks at the strategic, operational, or tactical levels of war or other contingency operations** *through the conduct of low-visibility, covert, or clandestine military actions.* AFSOF are *usually conducted in enemy-controlled or politically sensitive territories* and may complement or support general-purpose force operations. AFSOF are part of a joint special operations forces (SOF) team that provides combatant commanders with a synergistic capability to accomplish specialized tasks.

Special operations differ from conventional operations in degree of physical and political risk, operational techniques, mode of employment, degree of overtness, independence from friendly support, and dependence on detailed operational intelligence and indigenous assets. That setting is one often dominated by high risk and political, environmental, and operational constraints. In addition, *governments often view the use of SOF as a means to control escalation in situations in which the use of conventional forces is unwarranted or undesirable.* Accordingly, theater CINCs may choose to utilize special operations forces, working either independently or in support of conventional forces, to operate in rear areas to exploit enemy weaknesses or collect intelligence that would not otherwise be available. *However, it must be emphasized that SOF can also operate as a strategic force independent of theater CINCs.* However, such employment should be carefully coordinated to prevent conflict with other operations.

Intelligence

Intelligence provides clear, brief, relevant, and timely analysis on foreign capabilities and intentions for planning and conducting military operations.

- *The overall objective of intelligence is to enable commanders and combat forces to "know the enemy" and operate smarter.* It helps commanders across the range of military operations by collecting, analyzing, fusing, tailoring, and disseminating intelligence to the right place at the right time for key decisionmaking. *Intelligence provides indications of enemy intentions and guides decisions on how, when, and where to engage enemy forces to achieve the commander's*



Reconnaissance Unmanned Aerial Vehicles (UAV).

objectives. It assists in combat assessment through munitions effects assessment and bomb damage assessment.

- *Intelligence organizations integrate technical and quantitative assessments with analytical judgments* based on detailed knowledge of the way the enemy thinks and operates. Intelligence personnel also *must maintain an independent perspective.* Commanders anticipate that even the best intelligence may not provide a complete picture, especially when the enemy is practicing deception or when the intelligence is derived from a single source. Still, intelligence gives commanders the best available estimate of enemy capabilities, COGs, and courses of action.

Surveillance

Surveillance is the function of **systematically observing air, space, surface, or subsurface areas, places, persons, or things, by visual, aural, electronic, photographic, or other means.** Surveillance is a *continuing process,* not oriented to a specific "target." In response to the requirements of military forces, surveillance must be designed to provide warning of enemy initiatives and threats and to detect changes in enemy activities. *Air- and space-based surveillance assets exploit elevation to detect enemy initiatives at long range.* For example, its extreme elevation makes space-based missile launch detection and tracking indispensable for defense against ballistic missile attack. *Surveillance assets are now essential to national and theater defense and to the security of air, space, subsurface, and surface forces.*

Reconnaissance

Reconnaissance complements surveillance *in obtaining, by visual observation or other detection methods, specific information about the activities and resources of an enemy or potential enemy; or in securing data concerning the meteorological, hydrographic, or geographic characteristics of a particular area.* Reconnaissance generally has a time constraint associated with the tasking. Collection capabilities, including airborne and space-based systems that are manned and unmanned, and their associated support systems, are tailored to provide the flexibility, responsiveness, versatility, and mobility required by the strenuous demands of fluid, global taskings. Intelligence critical to the prosecution of current combat operations is evaluated and transmitted in near real time to those elements having a need for that information. Reconnaissance forces possess multiple and diverse capabilities. *Because these capabilities are valuable across all levels of war, their specific employment at any one level should consider possible*

effects on other levels. Intelligence, surveillance, and reconnaissance must operate together, enabling commanders to preserve forces, achieve economies, and accomplish campaign objectives. They are integral to gaining and maintaining information superiority.

Combat Search and Rescue (CSAR)

CSAR is an integral part of US combat operations and must be considered across the range of military operations. CSAR consists of those **air operations conducted to recover distressed personnel during wartime or MOOTW.** *It is a key element in sustaining the morale, cohesion, and fighting capability of friendly forces.* It preserves critical combat resources and denies the enemy potential sources of intelligence. Although all US Air Force weapon systems have the inherent capability to support CSAR operations, certain forces are specifically dedicated for search, rescue, and recovery operations.

Navigation and Positioning

The function of navigation and positioning is to **provide accurate location and time of reference in support of strategic, operational, and tactical operations.** For example, space-based systems provide the Global Positioning System, airborne-based systems provide air-to-surface radar, and ground-based systems provide various navigation aids. Navigation and positioning help air forces by: accurate rendezvous for air refueling; synchronization of effort via a common timing capability; and position, location, and velocity for accurate weapons delivery, ingress/egress, as well as search and rescue. Navigation and positioning are key elements of information superiority and global awareness.

Weather Services

Weather services provided by the Air Force supply *timely and accurate environmental information, including both space environment and atmospheric weather,* to commanders for their objectives and plans at the strategic, operational, and tactical levels. It gathers, analyzes, and provides meteorological data for mission planning and execution. Environmental information is integral to the decision process and timing for employing forces and planning and conducting air, ground, and space launch operations. *Weather services also influence the selection of targets, routes, weapon systems, and delivery tactics, and are a key element of information superiority.*

CHAPTER FOUR

ORGANIZING US AIR FORCE FORCES

Air power is like poker. A second best hand is like none at all—it will cost you dough and win you nothing.

General George Kenney

AIR FORCE ORGANIZATION

The Air Force is America's only full-service air and space force. *Other Services' air and space arms have surface-support mission priorities that limit their ability to exploit the full scope of air and space operations at the strategic and operational levels of war.* For example, Army and Marine aviation arms are organized and designed to provide immediate and close support to their ground forces. Likewise, naval aviation's first priority is to support fleet operations. In contrast, *only the Air Force is charged with preparing air and space forces that are organized, trained, and equipped to fully exploit air and space power's capability to accomplish assigned missions across all theaters of operation.*

The Air Force organizes for wartime with global capabilities and responsibilities. Its organizational structures and processes must be simple, responsive, and flexible. *The Air Force will normally operate as a member of an interdependent team of land, naval, air, space, and special operations forces.* This interdependence demands attention to joint and multinational requirements when organizing, training, and equipping the Air Force.

The Air Force organizes within "the principle" and tenet of centralized control and decentralized execution. Organizational structures should be designed to exploit air and space power's versatility and flexibility to ensure that air and space forces remain responsive, survivable, and sustainable. *The versatility to use air and space forces against any level of objective, whether independently, in support of, or supported by other components, requires organizations that do not constrain employment concepts.* Flexibility allows forces to cope with the unexpected in modern, fast-paced military operations. Survivable forces must be able to sustain the operation with the proper balance of people, concepts, and equipment.

The Air Force has three components: Active Duty, the Air National Guard, and the Air Force Reserve. Each component is made up of military and civilian personnel. *Selected Air Reserve Component (ARC) forces are the initial and primary sources of augmentation of the active force.* ARC forces are manned, trained, and equipped to deploy with or support active forces as required.

The Air Force organizes, trains, and equips air forces through its MAJCOMs. *Those forces are provided to combatant commands (unified commands) for employment.* The organization of these MAJCOMs is based on combat, mobility, space, and special operations, plus the materiel support required for these operations.

Air Force MAJCOMs are subdivided into numbered air forces, wings, groups, squadrons, and other specialized units.

COMMAND RELATIONSHIPS

Clear and effective command relationships are central to effective operations and organizations. In order to apply the principles of war and tenets of airpower to any organization, *airmen must fully understand the terms of command and support that underpin today's organizations and operations.* A working understanding of command terminology is essential to understanding the relationships among components and the responsibilities inherent in organizations.

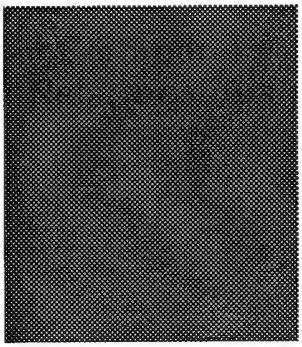


Figure 4.1. Command Relationships

There are four basic forms of command relationships—combatant command, operational control, tactical control, support—and a related authority: administrative control. *These relationships emanate from one chain of command but flow through two branches.* **Combatant command (command authority)** *(COCOM),* **operational control** *(OPCON),* **tactical control** *(TACON), and* **support** *are "warfighting" authorities that flow from the Secretary of Defense to the CINCs of* ***specified*** *or unified commands.* The CINC will assign various forces OPCON, TACON, or in support of the commander joint task force (CJTF), who in turn delegates appropriate authorities to the various component commanders, who in turn delegate appropriate authority to their subordinate commanders. **Administrative control** *(ADCON) is the Service's "organize, train, and equip" authority.*

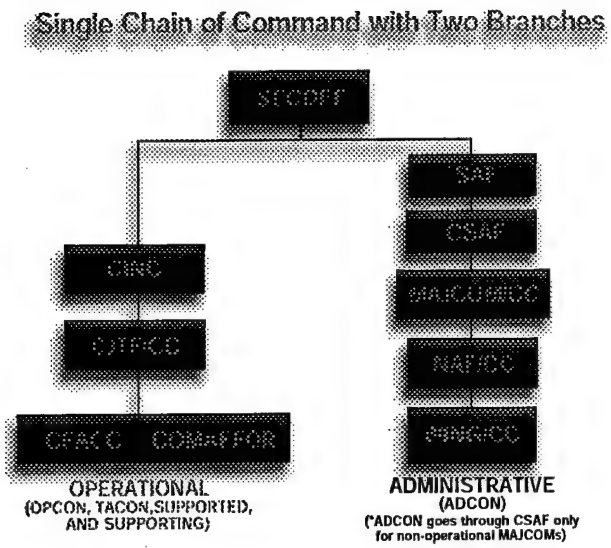


Figure 4.2. Single Chain of Command with Two Branches

It flows from the Secretary of Defense but is delegated to the Secretary of the Air Force (SECAF) and then to the warfighting MAJCOMs; for nonoperational MAJCOMs it is delegated through the Chief of Staff of the Air Force (CSAF). Operational MAJCOMs then delegate through the numbered air forces (NAFs) to subordinate commanders.

- **COCOM is non-transferable command authority established by law** (Title 10 ["Armed Forces",] United States Code, section 164.) COCOM is exercised by commanders of unified or specified combatant commands (Commander in Chief, US Central Command [USCINCCENT], Commander in Chief, US Atlantic Command [USCINCACOM], etc.) unless otherwise directed by the President or the Secretary of Defense and cannot be delegated. *COCOM is the authority of a combatant commander to perform those functions of command over assigned forces involving organizing and employing commands and forces, assigning tasks, designating objectives, and giving authoritative direction over all aspects of military operations, joint training, and logistics necessary to accomplish the missions assigned to the command.* Normally this authority is exercised through subordinate joint force commanders and Service and/or functional component commanders. Combatant command provides full authority to organize and employ commands and forces as the combatant commander considers necessary to accomplish assigned missions.

- **OPCON is command authority exercised by commanders at any echelon at or below the level of combatant command. OPCON can be delegated or transferred.** *Operational control normally provides full authority to organize commands and forces and to employ those forces as the commander in operational control considers necessary to accomplish assigned missions.* OPCON is inherent in combatant command. OPCON is the authority to perform those functions of command over subordinate forces involving organizing and employing commands and forces, assigning tasks, designating objectives, and giving authoritative direction necessary to accomplish the mission. OPCON includes authoritative direction over all aspects of military operations and joint training necessary to accomplish missions assigned to the command. OPCON *should* be exercised through the commanders of subordinate organizations and is normally exercised through subordinate joint force commanders and Service and/or functional component commanders. OPCON does not necessarily include authoritative direction for logistics or matters of administration, discipline, internal organization, or unit training. JFCs exercise OPCON of assigned and attached Air Force forces through the Commander, Air Force Forces (COMAFFOR).

- **TACON is the command authority over assigned or attached forces or commands, or military capability or forces made available for tasking, that is limited to the detailed and, usually, local direction and control of movements or maneuvers necessary to accomplish missions or tasks assigned.** TACON is inherent in operational control. TACON may be delegated to, and exercised at, any level at or below the level of combatant command. It includes sufficient authority for controlling and directing the application of force or tactical use of supporting forces. *Unless otherwise specified, TACON involves no responsibilities for organization, logistics, training, or discipline.* A visible example of TACON is when the COMAFFOR acting as the JFACC produces an air tasking order (ATO) that provides detailed instructions for other component air assets conducting joint missions. *TACON also includes the authority to command and position forces.* For example, a JFACC functioning as the area air defense commander (AADC) with TACON over Army Patriot forces would have the authority to place the batteries in specified locations for the purpose of providing air defense coverage for the joint force. *The commander exercising TACON is responsible for ensuring communications with the controlled unit.*

- **Support is the action of a force that aids, protects, complements, or sustains another force.**

  - *The* **"supported commander"** *has primary responsibility for all aspects of a task assigned by the Joint Strategic Capabilities Plan or other joint operations planning authority.* In the context of joint operations planning, this term refers to the commander who prepares operation plans or operation orders in response to requirements of the Chairman of the Joint Chiefs of Staff.

JFCs establish support relationships to emphasize or clarify priorities, provide a subordinate with an additional capability, and/or combine the effects of similar assets. This is normally done by directing one force (the "supporting force") to provide support to another force (the "supported force"). *The supported commander has the authority to exercise general direction of the supporting effort.* General direction includes the designation and prioritization of targets or objectives, timing and duration of the supporting action, and other instructions necessary for coordination and efficiency. A supported relationship does not include authority to position supporting units but does include authority to direct missions or objectives for those units. In contrast to the previous TACON example, the JFACC/AADC (as supported commander for counterair) is interested in the support provided by other assets (Army surface-to-air missiles [SAMs]) rather than where they are positioned. Another example would be the JFACC's interest in requesting Army tactical missile (ATACM) support to engage enemy mobile missiles, but is not involved with where the ATACM launchers are positioned. *Under a supported relationship, the supporting unit is responsible for ensuring connectivity.*

  - *The* ***"supporting commander"*** *provides augmentation forces or other support to a "supported commander" or develops a supporting plan.* This includes the designated combatant commands and defense agencies as appropriate.

- **ADCON is the direction or exercise of authority over subordinate or other organizations with respect to administration and support, to include organization of Service forces, control of resources and equipment, personnel management, unit logistics, individual/unit training, readiness, mobilization, demobilization, discipline, and other matters not**

included in the operational missions of the subordinate command or other organizations. *This is not a warfighting or command authority like that found in OPCON, TACON, or support relationships.* Normally the COMAFFOR will exercise administrative control of all Air Force personnel assigned or attached to the Air Force component command. ADCON authority is best established through publication of "G-series orders" which assign or attach subordinate units or personnel; during fast-breaking contingencies these orders may initially be verbal. These orders should detail the elements of ADCON which are necessary for the mission, and direct that the gaining organization may exercise those elements over the assigned or attached units or personnel. For example, the authority to exercise "full ADCON" could include such elements as building a tent city, ordering supplies and equipment, authorizing training sorties, conducting exercises, working assignment actions for personnel, exercising Uniformed Code of Military Justice (UCMJ) authority, developing budget requests, protecting personnel, and recommending awards and decorations. Also, host-tenant support agreements may give the host commander, in any given theater, UCMJ authority over personnel physically present in that theater, even if not formally assigned or attached through G-series orders. Finally, to accomodate differing contingecy operations, the G-series order may retain one or more of these authorities in the parent unit.

- **ADCON of Guard and Reserves:** Normally the COMAFFOR will exercise full ADCON over all active Air Force units and personnel assigned or attached to the AFFOR. However, ADCON over personnel of the Air Reserve Components (ARCs) (the Air Force Reserve and Air National Guard) is assigned as follows: (1) under full mobilization of the ARCs, the active Air Force will assume both OPCON and full ADCON over all mobilized ARC forces; (2) under less than full mobilization, the respective ARC will retain full ADCON over all unit personnel and individual mobilization augmentees (IMAs), while OPCON over them passes to the gaining COMAFFOR. Full mobilization of the ARCs requires passage by Congress of a Public Law or Joint Resolution declaring war or a national emergency. While the ARCs normally retain full ADCON over their respective forces in cases of less than full mobilization (partial mobilization, Presidential Selective Recall, and "volunteer" duty), they can voluntarily transfer specific ADCON elements to the gaining active Air Force organization in appropriate cases.

- ***Assign*** *means to place units or personnel in an organization where such placement is relatively permanent, and/or where such organization controls and administers the units or personnel for the primary function, or greater portion of the function, of the unit or personnel.* To detail individuals to specific duties or functions where such duties or functions are primary and/or relatively permanent. (Joint Pub 1-02)

- ***Attach*** *means the placement of units or personnel in an organization where such placement is relatively temporary.* This usually involves detailing individuals to specific functions where those functions are secondary or temporary (e.g., attached for quarters and rations; attached for flying duty). (Joint Pub 1-02)

ORGANIZATIONAL CONCEPTS

Understanding Air Force organizational terms and structures is critical because war is waged and airpower employed through and by organizations. Doctrine provides the distilled wisdom and experience regarding the employment of airpower. Through the principles of war, tenets of air and space power, and our core competencies, we come to appreciate the imperatives of air and space power. The following terms and concepts are central to employing air and space power:

- **The COMAFFOR is the Air Force officer designated as commander of the Air Force component command** assigned to a JFC at the unified, subunified, and Joint Task Force (JTF) level.

- **Air and Space Expeditionary Task Force (ASETF)** is a *deployed* NAF headquarters or command echelon subordinate to a NAF headquarters and assigned and attached operating forces (command element plus operating forces).

- **Air Expeditionary Forces (AEFs)** are wings, groups, and squadrons assigned and attached to an ASETF or attached to an in-place NAF by Department of the Air Force (DAF) orders.

- **Air Expeditionary Wing (AEW)** is a wing or a wing slice assigned or attached to an ASETF or an in-place NAF by DAF orders. Normally, the ASETF/in-place NAF commander also exer-

cises OPCON of AEWs. An AEW is composed of the wing command element and some groups.

- **Air Expeditionary Group (AEG)** is an independent group assigned or attached to an ASETF or an in-place NAF by DAF orders. Normally, the ASETF/in-place NAF commander also exercises OPCON of AEGs. An AEG is composed of the group command element and one or more squadrons.

The US Air Force requires an organizational structure that can support joint and combined combat operations throughout the entire spectrum of conflict. **In any operation, a COMAFFOR will be designated and serve as the commander of Air Force forces assigned and attached to the Air Force component command.** Space forces deployed to a theater of operation normally will be a separate organization assigned directly to an ASETF/in-place NAF but could be assigned to an AEW.

For each joint operation, the operational and administrative responsibilities and authorities of the COMAFFOR will be established through the respective operational and administrative chains of command. *The operational chain of command flows from the NCA through the combatant commander and, if established, any subordinate joint force commander(s), to the COMAFFOR. The Service administrative chain of command flows from the NCA through SECAF, CSAF (for nonoperational MAJCOMs), MAJCOM, and NAF commanders.*

Normally the COMAFFOR will:

- *exercise OPCON/TACON* (as delegated by the JFC) of all Air Force forces assigned or attached to the Air Force component command;

- *exercise ADCON of all Air Force forces assigned or attached* to the Air Force component command;

- *provide appropriate direction to supporting commanders* when designated the supported commander by appropriate authority through the operational or administrative chain of command;

- *serve as the JFACC*, responsible for air and space, when the JFC desires that an Air Force commander serve in that capacity; and

- *exercise TACON of forces/capabilities of other Services or nations made available by competent authority* through the operational chain of command.

Each CINC's COMAFFOR is the associated Air Force MAJCOM commander. For example, the Commander in Chief, US Pacific Command (USCINCPAC) COMAFFOR is the Commander, Pacific Air Forces (PACAF). MAJCOM commanders may delegate COMAFFOR authorities to NAF commanders. For example, Commander, Air Combat Command (ACC) has delegated some authorities to Commander, 9th Air Force (9 AF), who acts as COMAFFOR to USCINCCENT.

The NAF is the senior warfighting echelon of the US Air Force. A NAF conducts operations with assigned and attached forces under a command element.

- *When participating in joint operations, the tasked NAF will present US Air Force forces to the JFC as an ASETF.* In the case of an in-place NAF, the framework will be the same as an ASETF, but the in-place NAF will retain its NAF designation, (e.g. 7 AF).

- *When a CINC forms a JTF, the associated MAJCOM will form an ASETF or task an in-place NAF.* The COMAFFOR may be a colonel, brigadier general, or major general for an ASETF subordinate to a NAF. When the entire NAF is tasked in-place or as the ASETF, the NAF commander will be the COMAFFOR.

An ASETF or in-place NAF provides the JFC with air and space capabilities in a task-organized, tailored package. This force can be sized to the level of conflict and the desired political and military objectives. The command element always includes the COMAFFOR, a staff, and a command and control function.

In addition to authorities delegated to the COMAFFOR through the operational chain of command, the SECAF will publish a standing order outlining when and how the Air Force transfers the administrative chain of authority to a supported combatant commander's COMAFFOR for attached Air Force forces operating within a designated area of responsibility (AOR)/joint operations area (JOA). The respective COMAFFOR will publish a standing order or issue orders delegating ADCON on a case-by-case basis.

The responsibilities, authorities, and command relationships of the COMAFFOR for Air Force units attached to the ASETF/in-place NAF, but assigned to one of the functional combatant commanders (Commander in Chief, US Special Operations Command [USCINCSOC], Commander in Chief, US Space Command [USCINCSPACE], Commander in Chief, US Transportation Command [USCINCTRANS], or Commander in Chief, US Strategic Command [USCINCSTRAT]), will be as directed through the operational and administrative chains of command. Normally, *all* Air Force forces deployed to an AOR/JOA for the duration of a joint operation will be assigned or attached ADCON to the COMAFFOR.

- *Theater special operations aviation assets are normally centrally controlled by a joint special operations air component commander (JSOACC).* The JSOACC works very closely with the Special Operations Liaison Element, which coordinates all SOF operations with the JFACC.

- *Space forces normally remain assigned to the US Space Command (USSPACECOM) because they are global assets.* Combatant commanders or their subordinates draw upon space capabilities as needed. Within USSPACECOM, a NAF commander is the Air Force component commander designated to manage, integrate, and direct Air Force space forces. This NAF commander provides space support to theater forces either TACON or in Direct Support as required. Theater support teams are the primary interface between the joint force or component staffs and the NAF commander. Such teams will normally augment the COMAFFOR staff to provide space expertise in support of the planning and execution of air and space missions.

- *US Transportation Command (USTRANSCOM) assigned mobility forces accomplishing strategic or direct delivery missions will normally remain OPCON to USTRANSCOM because of the global nature of USTRANSCOM taskings.* However, air mobility elements and forces committed to the AOR/JOA will normally be attached TACON to the JTF.

- *US Strategic Command (USSTRATCOM) is supported by functional subordinate components,* organized into task forces (bomber, tanker, land-based missiles, submarine-based missiles, command and control survivability, and battle management), which execute operations for USCINCSTRAT. USCINCSTRAT, through the task force commanders, exercises OPCON whenever assigned or attached

forces are generated, on alert, or otherwise tasked to carry out a USCINCSTRAT mission or exercise. OPCON over USCINCSTRAT forces on routine, non-generated status will normally be exercised by the Service component.

EXPEDITIONARY AIR AND SPACE FORCES

The basic fighting unit of the Air Force is the squadron. *Squadrons are not designed to conduct independent operations.* They interact with other squadrons to provide the necessary synergy to conduct effective air and space operations. Combining squadrons or squadron elements (i.e., fighter/bomber/airlift, space, information operations, logistics, medical) into deployable groups or wings (including command and control capability) is the purpose of the ASETF.

The ASETF is an expeditionary force formed under a JTF for a temporary period of time to perform a specified mission. The ASETF provides the JFC with a *tailored package of air, space, and information capabilities* in a structure that preserves Air Force unity of command. An ASETF can be sized as a NAF, an AEW, or an AEG, depending on the level and nature of the conflict and the size of the air and space component required. When a NAF is the ASETF, it will maintain its peacetime designation (i.e., 9 ASETF). If less than an entire NAF deploys as the ASETF, the naming convention will include an operation name to indicate that the

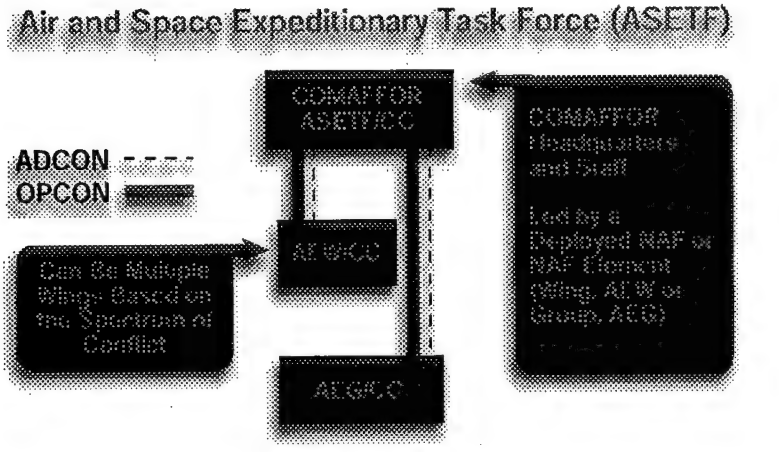


Figure 4.3. Air and Space Expeditionary Task Force (ASETF)

ASETF and COMAFFOR is a subordinate organization to the NAF (i.e., 9 ASETF-Southern Watch).

The exceptional speed, range, and lethality of expeditionary air and space forces allow global operations far from the operational area. Air expeditionary units will often deploy to the theater and operate as a part of the joint force under a JFC, but *strategic-, operational-, and tactical-level effects can be achieved as a synergistic component of a joint/combined force and increasingly as a single Service strategic force.* Air and space expeditionary forces will increasingly be able to influence a distant operational area without being physically present. The quick-reaction response and global reach of air and space forces make theater boundaries and organizational structures less constraining.

Because of the reduction in overseas military presence, expeditionary air and space forces that can mass quickly and move globally are critical to future military operations. Space and information elements play equally important roles in the global projection of air and space power. The nearly instantaneous access and global awareness they provide to air and joint force commanders will prove to be the decisive edge.

EPILOGUE

A VISION FOR THE FUTURE

> *Adherence to dogmas has destroyed more armies and cost more battles than anything in war.*
>
> J. F. C. Fuller

During almost a century of manned flight, air and space power has achieved a prominent position in military affairs. The dominance of the JFC's air arm during DESERT STORM saw the fruition of airpower's early promise. **Given the right circumstances, the speed, range, and stunning precision of air and space power—combined with the strategic perspective of its leaders—will allow it to dominate the entire range of military operations in the air, on land, on the sea, and in space.**

The doctrinal maxims of this document are based on experience, hard-won with the blood of airmen, and tempered by advances in technology that, if ignored, can lead (and have led) to disaster. **AFDD 1 is the "capstone" publication in the Air Force doctrine hierarchy and the premier statement of "theory" that guides the employment of Air Force air and space power.** *Its sister "capstone operational" document, AFDD 2, complements AFDD 1 with the basic principles of air and space power application—how we fight—and the means by which the Air Force applies its people and resources to achieve assigned missions.*

Neither of these documents, nor any in the series of Air Force doctrine documents, is complete—they are continuous works in progress. *We must remain alert and receptive to the lessons of the past and technologies of the future that may alter the art of air and space warfare.* We must not assume that things have not or will not change. It was a doctrinal disease called "dogma" that led hundreds of thousands of World War I soldiers on all sides to fall before the adversary's machine guns, that led thousands of unescorted bombers to challenge and almost lose to the first-rate fighters of the German Air Force in World War II, and that led to our lack of vision in applying air and space power in Southeast Asia. The shining success of air and

space power in DESERT STORM and in the skies over Bosnia illuminates the ability of the Air Force to learn and apply its lessons.

But the lessons of the last war are always suspect—all conflicts are different. Certain principles, like unity of command, objective, and offensive, have stood the test of time. Other ideas, like unescorted daytime bombing, decentralized command, and the preeminence of nuclear weapons, have not. If we ignore the potential of space and information operations and the global and strategic natures of air and space power, we may commit the same sins as our forebears. If we ignore the reality of "learning" adversaries who will seek asymmetric strategies, anti-access capabilities, and favorable arenas within which to influence and engage us, we flirt with catastrophe. Tomorrow a new set of conditions and requirements will prevail. In fact, new conditions and environments are already emerging. The best hedge is an institutional commitment to learn from experience and to exploit relevant ideas and new technologies so we may be the masters of our future.

At the Heart of Warfare lies doctrine . . .

Suggested Readings

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Roger Beaumont, *Joint Military Operations,* (Greenwood). 1993

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GLOSSARY

Abbreviations and Acronyms

AADC	area air defense commander
ACC	Air Combat Command
ADCON	administrative control
AEF	Air Expeditionary Force
AEG	Air Expeditionary Group
AEW	Air Expeditionary Wing
AFDD	Air Force Doctrine Document
AFSOF	Air Force special operations forces
AFTTP	Air Force Tactics, Techniques, and Procedures
AOR	area of responsibility
ARC	Air Reserve Component
ASETF	Air and Space Expeditionary Task Force
ATO	air tasking order
ATACM	Army tactical missile
C^2	command and control
CINC	commander in chief
CJTF	commander, joint task force
COCOM	combatant command (command authority)
COMAFFOR	Commander, Air Force Forces
CONUS	continental United States
CSAF	Chief of Staff of the Air Force
ICBM	intercontinental ballistic missile
IMA	individual mobilization augmentee
INFOSEC	information security
ISR	intelligence, surveillance, and reconnaissance
JFACC	joint force air component commander
JFC	joint force commander
JOA	joint operations area
JSOACC	joint special operations air component commander
JV 2010	*Joint Vision 2010*
MAJCOM	major command
MOOTW	military operations other than war
NAF	numbered air force
NCA	national command authorities

OPCON	operational control
OPSEC	operations security
PACAF	Pacific Air Forces
pub	publication
RAF	Royal Air Force
SAM	surface-to-air missile
SEAD	suppression of enemy air defenses
SECAF	Secretary of the Air Force
SIOP	Single Integrated Operation Plan
SOF	special operations forces
TACON	tactical control
UCMJ	Uniformed Code of Military Justice
USCINCACOM	Commander in Chief, US Atlantic Command
USCINCCENT	Commander in Chief, US Central Command
USCINCPAC	Commander in Chief, US Pacific Command
USCINCTRANS	Commander in Chief, US Transportation Command
USCINCSPACE	Commander in Chief, US Space Command
USCINCSTRAT	Commander in Chief, US Strategic Command
USSPACECOM	US Space Command
USSR	Union of Soviet Socialist Republics
WMD	weapons of mass destruction

Definitions

air and space maneuver. The employment of air and space power to achieve strategic, operational, or tactical objectives in any order or combination.

air and space power. The synergistic application of air, space, and information systems to project global strategic military power.

air campaign. A connected series of operations conducted by air forces to achieve joint force objectives within a given time and area.

air interdiction. Air operations conducted to destroy, neutralize, or delay the enemy's military potential before it can be brought to bear

effectively against friendly forces at such distance from friendly forces that detailed integration of each air mission with the fire and movement of friendly forces is not required. (Joint Pub 1-02)

airlift. Operations to transport and deliver forces and materiel through the air in support of strategic, operational, or tactical objectives.

air refueling. The capability to refuel aircraft in flight, which extends presence, increases range, and allows air forces to bypass areas of potential trouble.

air superiority. That degree of dominance in the air battle of one force over another which permits the conduct of operations by the former and its related land, sea and air forces at a given time and place without prohibitive interference by the opposing force. (Joint Pub 1-02)

air supremacy. That degree of air superiority wherein the opposing air force is incapable of effective interference. (Joint Pub 1-02)

battlespace. The commander's conceptual view of the area and factors which he must understand to successfully apply combat power, protect the force, and complete the mission. It encompasses all applicable aspects of air, sea, space, and land operations that the commander must consider in planning and executing military operations. The battlespace dimensions can change over time as the mission expands or contracts, according to operational objectives and force composition. Battlespace provides the commander a mental forum for analyzing and selecting courses of action for employing military forces in relationship to time, tempo, and depth.

centers of gravity. Those characteristics, capabilities, or localities from which a military force derives its freedom of action, physical strength, or will to fight. (Joint Pub 1-02)

close air support. Air action by fixed- and rotary-wing aircraft against hostile targets which are in close proximity to friendly forces and which require detailed integration of each air mission with the fire and movement of those forces. Also called **CAS.** (Joint Pub 1-02)

combat search and rescue. A specific task performed by rescue forces to effect the recovery of distressed personnel during war or military operations other than war. Also called **CSAR.** (Joint Pub 1-02)

command and control. The exercise of authority and direction by a properly designated commander over assigned and attached forces in

the accomplishment of the mission. Command and control functions are performed through an arrangement of personnel, equipment, communications, facilities, and procedures employed by a commander in planning, directing, coordinating, and controlling forces and operations in the accomplishment of the mission. Also called C^2. (Joint Pub 1-02)

core competency. The basic areas of expertise or the specialties that the Air Force brings to any activity across the spectrum of military operations whether as a single Service or in conjunction with the core competencies of other Services in joint operations. Core competencies represent both air and space power application theory and physical capability represented in a well-trained and equipped air force.

counterair. A US Air Force term for air operations conducted to attain and maintain a desired degree of air superiority by the destruction or neutralization of enemy forces. Both air offensive and air defensive actions are involved. The former range throughout enemy territory and are generally conducted at the initiative of the friendly forces. The latter are conducted near or over friendly territory and are generally reactive to the initiative of the enemy air forces. (Joint Pub 1-02)
[Counterair integrates and exploits the mutually beneficial effects of offensive and defensive operations by fixed- and rotary-wing aircraft, surface-to-air and air-to-air missiles, antiaircraft guns, artillery, and electronic warfare to destroy or neutralize enemy aircraft and missile forces both before and after launch.] {Italicized definition in brackets applies only to the Air Force and is offered for clarity.}

counterinformation. Counterinformation seeks to establish a desired degree of control in information functions that permits friendly forces to operate at a given time or place without prohibitive interference by the opposing force.

counterland. Operations conducted to attain and maintain a desired degree of superiority over surface operations by the destruction, disrupting, delaying, diverting, or other neutralization of enemy forces. The main objectives of counterland operations are to dominate the surface environment and prevent the opponent from doing the same.

counterspace. Those offensive and defensive operations conducted by air, land, sea, space, special operations, and information forces with the objective of gaining and maintaining control of activities conducted in or through the space environment.

defensive counterair operation. Operations to detect, identify, intercept, and destroy enemy air and missile forces attempting to attack or penetrate the friendly air environment. These operations are synonymous with air defense operations. They encompass both active and passive measures and are normally conducted near or over friendly territory and generally react to the initiative of enemy forces. Also called **DCA**.

doctrine. Fundamental principles by which the military forces or elements thereof guide their actions in support of national objectives. It is authoritative but requires judgment in application. (Joint Pub 1-02)

information. 1. Facts, data, or instructions in any medium or form. 2. The meaning that a human assigns to data by means of the known conventions used in their representation. (Joint Pub 1-02)

information operations. Those actions taken to affect adversary information and information systems while defending one's own information and information systems. Also called **IO**.

information security. The result of any system of policies and procedures for identifying, controlling, and protecting from unauthorized disclosure, information whose protection is authorized by executive order or statute.

information superiority. The ability to collect, control, exploit and defend information while denying an adversary the ability to do the same. See also information. (Joint Pub 1-02)
[The capability to collect, process, and disseminate an uninterrupted flow of information while exploiting or denying an adversary's ability to do the same.] {Italicized definition in brackets applies only to the Air Force and is offered for clarity.}

information warfare. Actions taken to achieve information superiority by affecting adversary information, information-based processes, information systems, and computer-based networks while leveraging and defending one's own information, information-based processes, information systems, and computer-based networks. Also called **IW**. (Joint Pub 1-02)
[Information operations conducted during time of crisis or conflict to achieve or promote specific objectives over a specific adversary or adversaries.] {Italicized definition in brackets applies only to the Air Force and is offered for clarity.}

intelligence. 1. The product resulting from the collection, processing, integration, analysis, evaluation, and interpretation of available information concerning foreign countries or areas. 2. Information and knowledge about an adversary obtained through observation, investigation, analysis, or understanding. (Joint Pub 1-02)

interdiction. An action to divert, disrupt, delay, or destroy the enemy's surface military potential before it can be used effectively against friendly forces. (Joint Pub 1-02)

intertheater airlift. Airlift that operates between the continental United States and a theater or between theaters. *[Formerly called strategic airlift.]*

intratheater airlift. The common-user air transportation and delivery of personnel and equipment within a CINC's AOR. *[Formerly called theater airlift.]*

joint doctrine. Fundamental principles that guide the employment of forces of two or more Services in coordinated action toward a common objective. It will be promulgated by the Chairman of the Joint Chiefs of Staff, in coordination with the combatant commands, Services, and Joint Staff. See also doctrine. (Joint Pub 1-02)

joint force. A general term applied to a force composed of significant elements, assigned or attached, of two or more Military Departments, operating under a single joint force commander. See also joint force commander. (Joint Pub 1-02)

joint force air component commander. The joint force air component commander derives authority from the joint force commander who has the authority to exercise operational control, assign missions, direct coordination among subordinate commanders, redirect and organize forces to ensure unity of effort in the accomplishment of the overall mission. The joint force commander will normally designate a joint force air component commander. The joint force air component commander's responsibilities will be assigned by the joint force commander (normally these would include, but not be limited to, planning, coordination, allocation, and tasking based on the joint force commander's apportionment decision). Using the joint force commander's guidance and authority, and in coordination with other Service component commanders and other assigned or supporting commanders, the joint force air component commander will recommend to the joint force commander apportionment of air sorties to

various missions or geographic areas. Also called **JFACC**. See also joint force commander. (Joint Pub 1-02)

joint force commander. A general term applied to a combatant commander, subunified commander, or joint task force commander authorized to exercise combatant command (command authority) or operational control over a joint force. Also called **JFC**. See also joint force. (Joint Pub 1-02)

joint task force. A joint force that is constituted and so designated by the Secretary of Defense, a combatant commander, a subunified commander, or an existing joint force commander. Also called **JTF**. (Joint Pub 1-02)

logistics. The science of planning and carrying out the movement and maintenance of forces. In its most comprehensive sense, those aspects of military operations which deal with: a. design and development, acquisition, storage, movement, distribution, maintenance, evacuation, and disposition of materiel; b. movement, evacuation, and hospitalization of personnel; c. acquisition or construction, maintenance, operation, and disposition of facilities; and d. acquisition or furnishing of services. (Joint Pub 1-02)

military operations other than war. Operations that encompass the use of military capabilities across the range of military operations short of war. These military actions can be applied to complement any combination of the other instruments of national power and occur before, during, and after war. Also called **MOOTW**. (Joint Pub 1-02)
[An umbrella term encompassing a variety of military operations conducted by the Department of Defense that normally complement the other instruments of national power. These military operations are as diverse as providing support and assistance (when consistent with US law) in a non-threatening environment, and conducting combat not associated with war.] {Italicized definition in brackets applies only to the Air Force and is offered for clarity.}

military space forces. Those systems and associated infrastructure which establish space power and are employed by the military to achieve national security objectives. Space forces include space-based systems, ground-based systems for tracking and controlling objects in space and transiting through space, launch systems that deliver space elements, and people who operate, maintain, or support those systems.

military strategy. The art and science of employing the armed forces of a nation to secure the objectives of national policy by the application of force or the threat of force. (Joint Pub 1-02)

National Command Authorities. The President and the Secretary of Defense or their duly deputized alternates or successors. Also called **NCA**. (Joint Pub 1-02)

national strategy. The art and science of developing and using the political, economic, and psychological powers of a nation, together with its armed forces, during peace and war, to secure national objectives. (Joint Pub 1-02)

navigation and positioning. Those operations that provide accurate location and time of reference in support of strategic, operational, and tactical missions.

offensive counterair operation. An operation mounted to destroy, disrupt, or limit enemy airpower as close to its source as possible. (Joint Pub 1-02) *[Offensive counterair operations range throughout enemy territory and are generally conducted at the initiative of friendly forces. Also called* **OCA***]* {Italicized definition in brackets applies only to the Air Force and is offered for clarity.}

operational level of war. The level of war at which campaigns and major operations are planned, conducted, and sustained to accomplish strategic objectives within theaters or areas of operations. Activities at this level link tactics and strategy by establishing operational objectives needed to accomplish the strategic objectives, sequencing events to achieve the operational objectives, initiating actions, and applying resources to bring about and sustain these events. These activities imply a broader dimension of time or space than do tactics; they ensure the logistic and administrative support of tactical forces, and provide the means by which tactical successes are exploited to achieve strategic objectives. See also strategic level of war; tactical level of war. (Joint Pub 1-02)

reconnaissance. A mission undertaken to obtain, by visual observation or other detection methods, information about the activities and resources of an enemy or potential enemy; or to secure data concerning the meteorological, hydrographic, or geographic characteristics of a particular area. (Joint Pub 1-02)

space control. Operations to assure the friendly use of the space environment while denying its use to the enemy. Achieved through

offensive and defensive counterspace carried out to gain and maintain control of activities conducted in or through the space environment.

space power. The capability to exploit space forces to support national security strategy and achieve national security objectives.

space superiority. Degree of control necessary to employ, maneuver, and engage space forces while denying the same capability to an adversary.

space support. Those operations conducted with the objective of deploying, sustaining, and augmenting elements or capabilities of military space systems. Space support consists of spacelift and on-orbit support.

special operations. Operations conducted by specially organized, trained, and equipped military and paramilitary forces to achieve military, political, economic, or psychological objectives by unconventional military means in hostile, denied, or politically sensitive areas. These operations are conducted during peacetime competition, conflict, and war, independently or in coordination with operations of conventional, nonspecial operations forces. Political-military considerations frequently shape special operations, requiring clandestine, covert, or low visibility techniques and oversight at the national level. Special operations differ from conventional operations in degree of physical and political risk, operational techniques, mode of employment, independence from friendly support, and dependence on detailed operational intelligence and indigenous assets. Also called **SO**. (Joint Pub 1-02)

strategic attack. Military action carried out against an enemy's center(s) of gravity or other vital target sets, including command elements, war-production assets, and key supporting infrastructure in order to effect a level of destruction and disintegration of the enemy's military capacity to the point where the enemy no longer retains the ability or will to wage war or carry out aggressive activity.

strategic level of war. The level of war at which a nation, often as a member of a group of nations, determines national or multinational (alliance or coalition) security objectives and guidance, and develops and uses national resources to accomplish these objectives. Activities at this level establish national and multinational military objectives; sequence initiatives; define limits and assess risks for the use of military and other instruments of national power; develop global plans

or theater war plans to achieve these objectives; and provide military forces and other capabilities in accordance with strategic plans. See also operational level of war; tactical level of war. (Joint Pub 1-02)

strategy. The art and science of developing and using political, economic, psychological, and military forces as necessary during peace and war, to afford the maximum support to policies, in order to increase the probabilities and favorable consequences of victory and to lessen the chances of defeat. See also military strategy; national strategy. (Joint Pub 1-02)

suppression of enemy air defenses. That activity which neutralizes, destroys, or temporarily degrades surface-based enemy air defenses by destructive and/or disruptive means. Also called SEAD. (Joint Pub 1-02)

surveillance. The systematic observation of aerospace, surface or subsurface areas, places, persons, or things, by visual, aural, electronic, photographic, or other means. (Joint Pub 1-02)

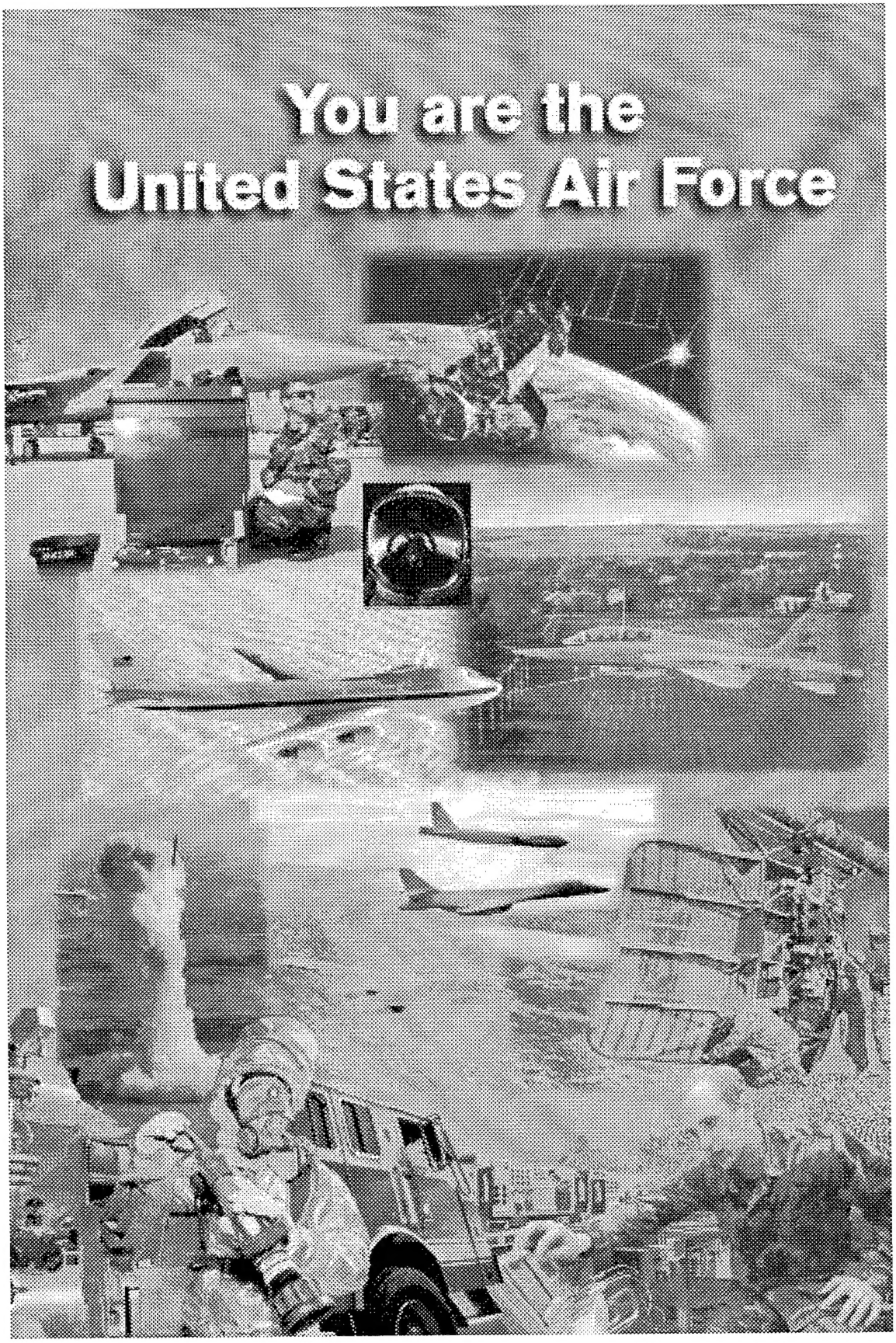
tactical level of war. The level of war at which battles and engagements are planned and executed to accomplish military objectives assigned to tactical units or task forces. Activities at this level focus on the ordered arrangement and maneuver of combat elements in relation to each other and to the enemy to achieve combat objectives. See also operational level of war; strategic level of war. (Joint Pub 1-02)

tactics. 1. The employment of units in combat. 2. The ordered arrangement and maneuver of units in relation to each other and/or to the enemy in order to use their full potentialities. (Joint Pub 1-02)

theater. The geographical area outside the continental United States for which a commander of a combatant command has been assigned responsibility. (Joint Pub 1-02)

war. Open and often prolonged conflict between nations (or organized groups within nations) to achieve national objectives.

weather services. A specialized task performed by air and space forces to provide timely and accurate environmental information to support strategic, operational, and tactical military operations.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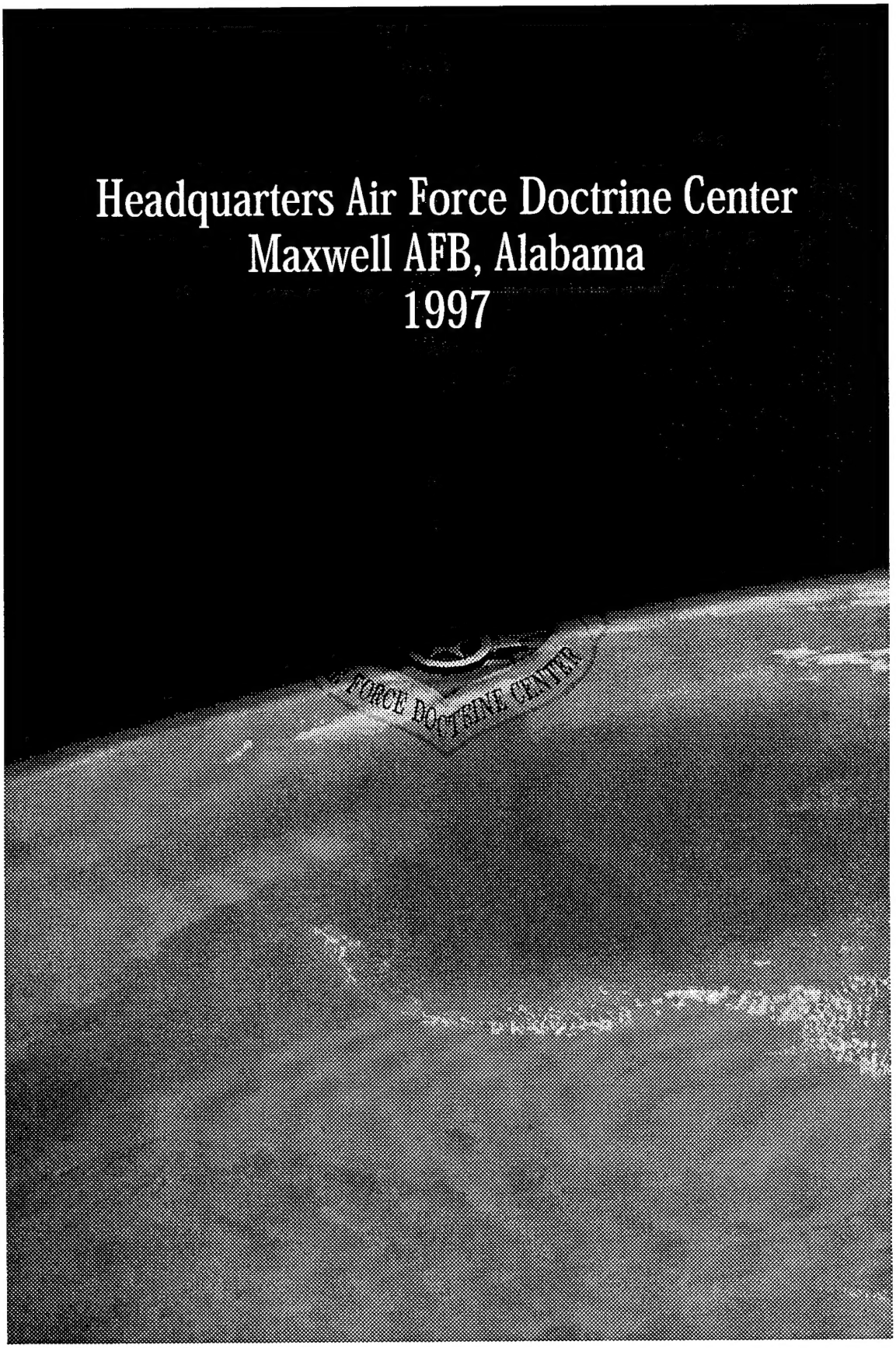
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